TEXTILE WORLD

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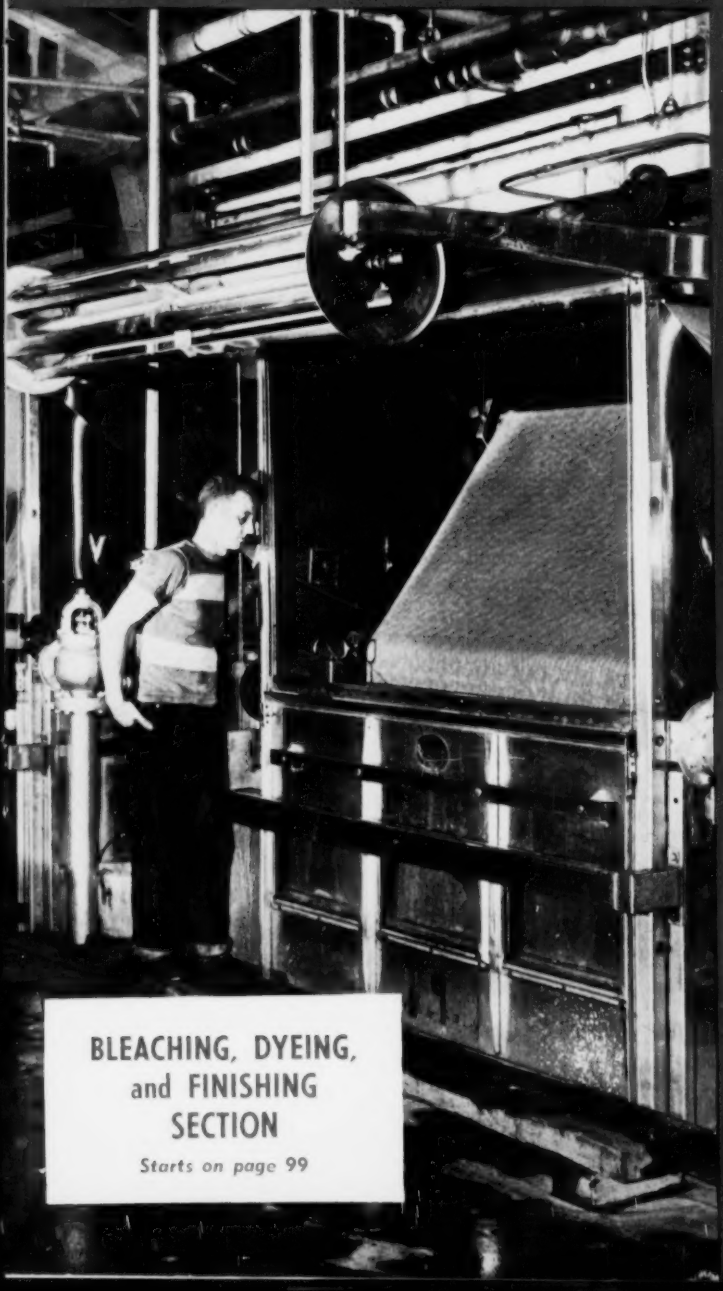

BLEACHING, DYEING, and FINISHING SECTION

Starts on page 99

ARTICLES IN THIS ISSUE DISCUSS:

"You Finish It" (Editorial) 4
Pepperell's New Cafeteria 91
What About Off-the-Job Safety? 92
Speeding Up Cotton Cards 94
Weave-Room Organization 98
Finishing Pile Fabrics 99
Continuous Bleaching Range 102
Dyeing With Hot Oil 104
Pad-Steam Range 106
Barotor for Pressure Dyeing 107
Danish Jig Saves Dyes, Chemicals ... 108
New Print Ager Speeds Production ... 109
New F.-F. Machine 110
Little Loom Motor Does A Big Job 112
Fabric Engineering 113
Power Plant Serves Two Mills 116
Card-Grinding Methods Analyzed 118
Saved—50 Days' Production Time ... 120
Temples Without Rolls Developed ... 122
Warp Tension on C-4 Looms 123
Quality In 400-Needle Knitting 124
Improved Cloth Appearance 126
Accumulator for Steam Supply 129
"Dangerous Trend" in Ginning 133
Tests To Help Select Second Hands .. 135
Paper-Fabric Manufacturing 137
Compounding Vinyl Coatings 143
Proportioned Half-Hose 147
AATCC Exhibit Guide 180

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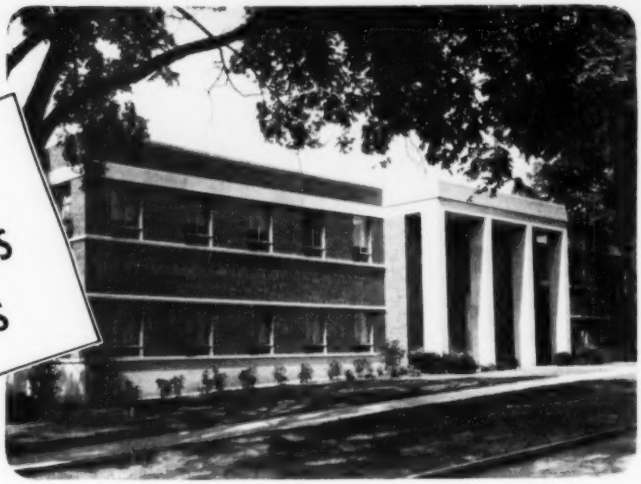
INDEX to ADVERTISERS
Keyed by PRODUCT
See page 335

New Administration Building, West Point Manufacturing Company



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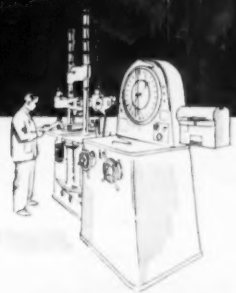

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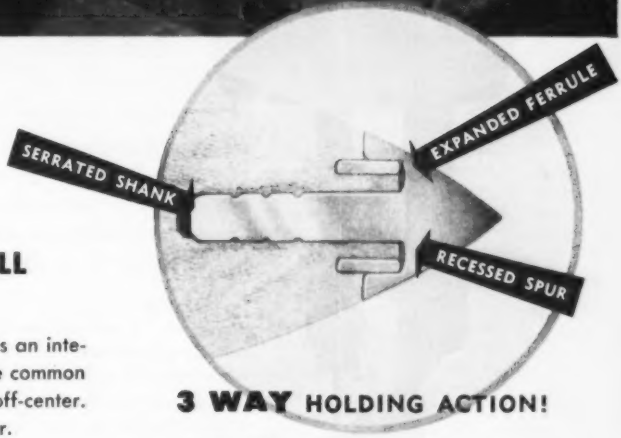

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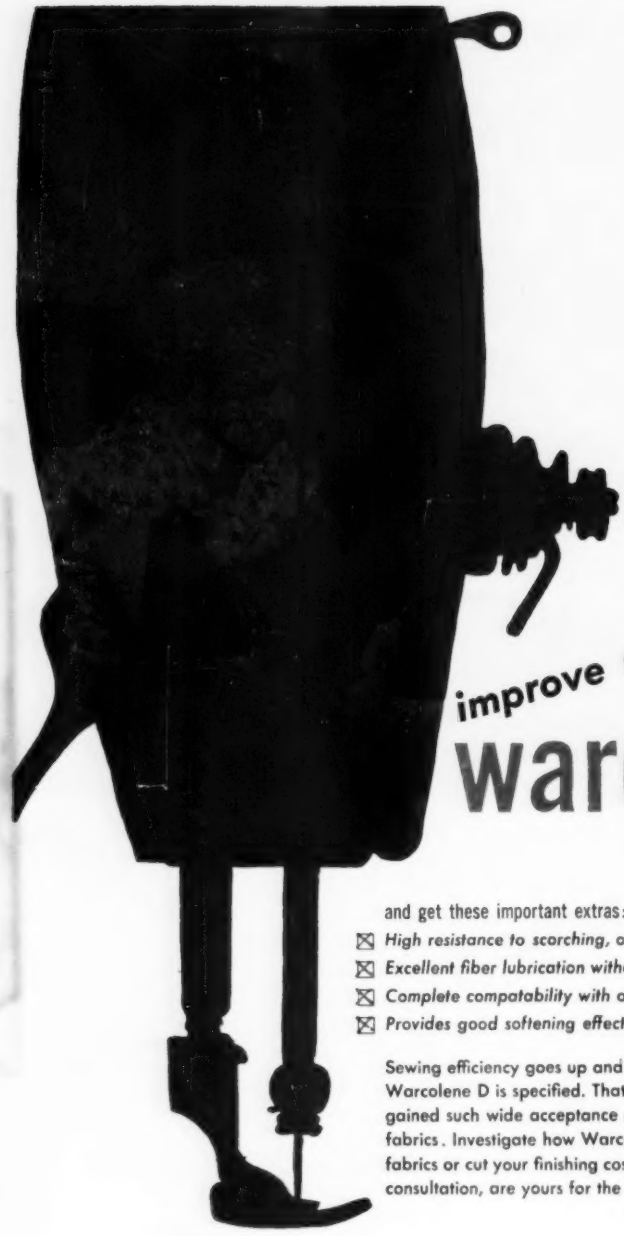

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Departments

Editorial	4
Exploring the Textile Community	151
Kinks and Short-Cuts	172
New Dyes and Chemicals	168
News About Men	312
News About Mills	304
News About Suppliers	294
News of the Month	286
Obituary	320
Pointers for Supervisors	149
Questions and Answers	258
Reader Service	187
Review of Books	256
Round Table	171
Textile Equipment News	155
Textile Calendar	290
Textile Tickles	171
Advertisers' Index	335

Table of Contents

OCTOBER • 1952
Vol. 102 No. 10
KEYED ACCORDING TO READER INTEREST

Feature Articles

SPINNER	WEAVER	KNITTER	FINISHER	ENGINEER			COTTON	SYNTHETICS	WOOL
Y	W	K	F	E	"You Finish It" (Editorial)	4	C	S	W
Y	W	K	F	E	Pepperell's New CAFETERIA	91	C	S	W
Y	W	K	F	E	What About Off-the-Job SAFETY?	92	C	S	W
Y					What Happens When You Speed Up CARDS?	94	C		
	W				New Ideas in WEAVE-ROOM Organization	98	C	S	W
			F	E	Finishing PILE FABRICS	99	C	S	W
			F	E	Continuous BLEACHING RANGE Is Flexible	102	C	S	W
			E		Dyeing With HOT OIL	104	C		
			F	E	How To Use Your PAD-STEAM RANGE	106	C	S	W
			F		Pressure Dyeing With Du Pont's BAROTOR	107	C	S	W
			F		DANISH JIG Saves Time, Dyes, Chemicals	108	C	S	W
			F	E	New PRINT AGER Speeds Production	109	C	S	W
		K		E	New FULL-FASHIONED Machine	110		S	W
	W				A Little LOOM MOTOR Does a Big Job	112	C	S	
Y	W	K			All-Fiber System for FABRIC ENGINEERING	113	C	S	W
				E	New POWER PLANT Serves Two Woolen Mills	116	C	S	W
Y					Mill Analyzes CARD-GRINDING Methods	118	C	S	W
Y	W	K	F	E	Saved—50 Days PRODUCTION TIME	120	C	S	W
	W				TEMPLES Without Rolls Developed	122	C		W
	W				Constant WARP TENSION on C-4 Looms	123	C	S	
		K			Keys to Quality In 400-Needle KNITTING	124	C	S	
	W				Improved CLOTH APPEARANCE	126	C	S	W
				E	ACCUMULATOR for Constant Steam Supply	129	C	S	W
Y	W				"Dangerous Trend" in GINNING	133	C		
Y	W	K	F	E	Tests Can Help You Select SECOND HANDS	135	C	S	W
Y	W				PAPER-FABRIC Manufacturing	137	C	S	W
			F	E	Components to Compound VINYL COATINGS	143	C		
		K			Proportioned HALF-HOSE	147	C	S	W
Y	W	K	F	E	AATCC Exhibit Guide	180	C	S	W

Textile Equipment News

Y					New Variable-Speed DRIVE	155	C	S	W
	W				New CONVEYOR Equipment	156	C	S	
Y					"Stelometer" Cotton-Fiber TESTER	158	C		
	W				Pressure-Cooked and -Stored SIZE	158	C	S	W
Y	W				THREAD-GUIDE Material Keeps Luster	160	C	S	W
	W				Italian NARROW-FABRIC Loom	160	C	S	W
			F		NAPPING Energy Indicators	160	C	S	W
				E	New HUMIDIFYING Unit Is Self-Contained	162	C	S	W
Y				E	Off-the-Floor V-BELT Drive Saves Space	162	C	S	
			F		British HALF-HOSE Machine	162	C	S	W
Y				E	New CARD DRIVE	164	C	S	W
Y					GRINDING Routine Checked Visually	164	C	S	W
			F		Device Speeds Reading of YARDAGE	164	C	S	W
Y	W	K	F	E	OIL-MIST Lubrication Simplified	166	C	S	W
		K		E	NEEDLE-BAR Slot Milling Done Quickly	166	C	S	W
	W				Bobbin FINISH Integrated Into Wood	166	C	S	W
				E	Controls LIQUID-LEVEL Data	168	C	S	W
Y				E	Powered Hand TRUCK Is More Powerful	168	C	S	W

Kinks and Short-Cuts

	W				BINDER Replaces Checkstraps on Looms	172	C		
	W				Remove Precision LET-OFF With a Jack	172	C	S	
Y	W	K	F	E	Box HOISTING Can Be a One-Man Job	173	C	S	W
				E	How Your VISE Can Do More Work	173	C	S	W
Y					Method for Handling Cotton SAMPLES	174	C		
		K			Check for Crooked TRICOT NEEDLES	174	C	S	W
				E	How To Repair Worn THREADS	174	C	S	W
				E	Simple Drill-Depth STOP Prevents Damage	176	C	S	W
Y					FIBER-FINENESS Scale for Cotton	176	C		
				E	Two Ways To Get Larger Tapped HOLES	176	C	S	W
				E	Use Tape When You Dissect FABRICS	176	C	S	W

THE Long-Range VIEW

"You Finish It"

This issue of TEXTILE WORLD contains a new editorial feature: a bleaching, dyeing, and finishing section instituted to help keep pace with the steadily growing chemical-finishing branch of the industry. It therefore seems an appropriate time to point out an unhappy condition brought to our attention several times lately: namely, mill men brought up in manufacturing fail to understand the problems of the finisher.

We recently talked with one of the top textile chemists and finishers in the country and were surprised to learn that he is extremely unhappy in his present position. His company is a well-known group of mills, and he does the chemical finishing for all the mills in the group. Since then we have talked with two other finishers, both with large, well-known mills, and found that they had identical complaints.

That complaint is that management responsible for mill production cannot or will not understand finishing problems and try to coordinate manufacturing and finishing to the best interest of both. The attitude might be summed up as: "We manufacture cloth this way. You finish it."

Every mill manager and superintendent knows the woes that can be caused by departmental overseers failing to cooperate with each other. Very often an overseer has trouble because one shift will not work to the advantage of the other shifts. Even spinning doffers, card grinders, or loomfixers, working entirely for their own interests, can cause extra work and loss of production by other workers who must pay for their lack of cooperation.

The pattern is so well-known that every mill man who has progressed to management level knows it and dreads it. It is surprising, therefore, to find so many finishers dissatisfied because the manufacturing organization of the mill works at cross purposes with the wet-processing department.

In practically all operations where manufacturing and chemical finishing are done in the same organization, management and top supervision are carried out by manufacturing men. Their education and training have been in the mechanical processes involved in making cloth out of fiber. Usually, they know no more about finishing than a finisher knows about setting cards or fixing looms. Worst of all, they have little or no idea of what can and cannot be done in chemical processing.

Yet in many instances impossible tasks are thrown to the finisher. And many of these tasks arise from the fact that the manufacturing processes are unduly favored at the expense of finishing.

From any point of view, such practices are prejudiced and short-sighted. All three of the finishers mentioned earlier in this editorial are actively looking for work elsewhere. Sooner or later, three big mills are going to lose their finishers. With the chemical-processing industry one of the fastest expanding industries in the United States right now, these men will find it easy to get a job with a company whose management and top supervision are not bound by mechanical-processing habits and traditions.

When that time comes, the men responsible for the finisher's dissatisfaction will either blithely assume that they are innocent or adopt an arrogant "Let-him-go" attitude. In either case, the textile industry will have lost good men.

This problem of simply working together for the good of the whole organization is one of the most costly problems in the textile industry—indeed, in all industry. Personnel policies, incentive pay, profit sharing, equivalent workloads, and dozens of other management tools have been devised in an effort to solve the fundamental problem of working together toward a common goal. Yet men fail and mills fail because these external tools cannot succeed where common courtesy and acceptance of elementary responsibility break down.

Every key man in the textile industry has been bombarded with advice and training in how to get along with people. In all this training very much is made of how to handle gripes, and the rules are to "get all the facts" and do whatever is necessary to quiet the complainer.

That's fine. We would not try to improve on it. However, there are many men in the textile industry—and finishers generally are of that type—who will not gripe. The first evidence you have of their being dissatisfied is a notice that they're leaving. When that happens, whatever you think, you've lost a man.

So to the maxim "Get all the facts" we would add: Do some serious soul-searching before, during, and after the complaint, whatever form it takes. External causes may have brought it about, but chances are very good that your outlook and attitude might have been the prime causes.

J. M. Thomas

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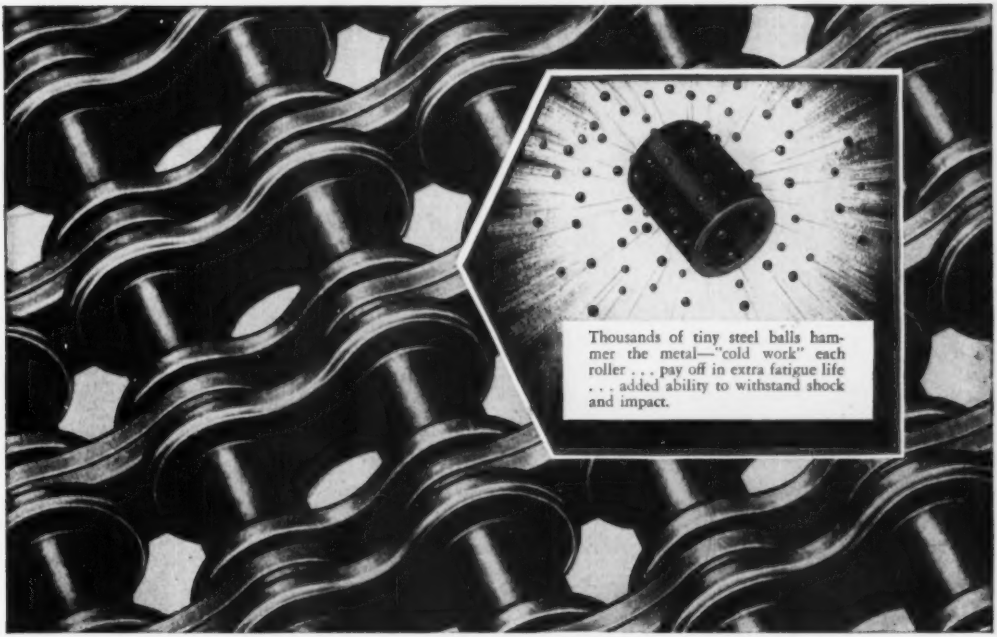
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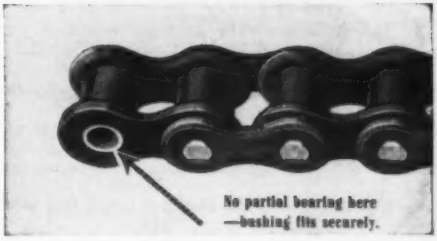

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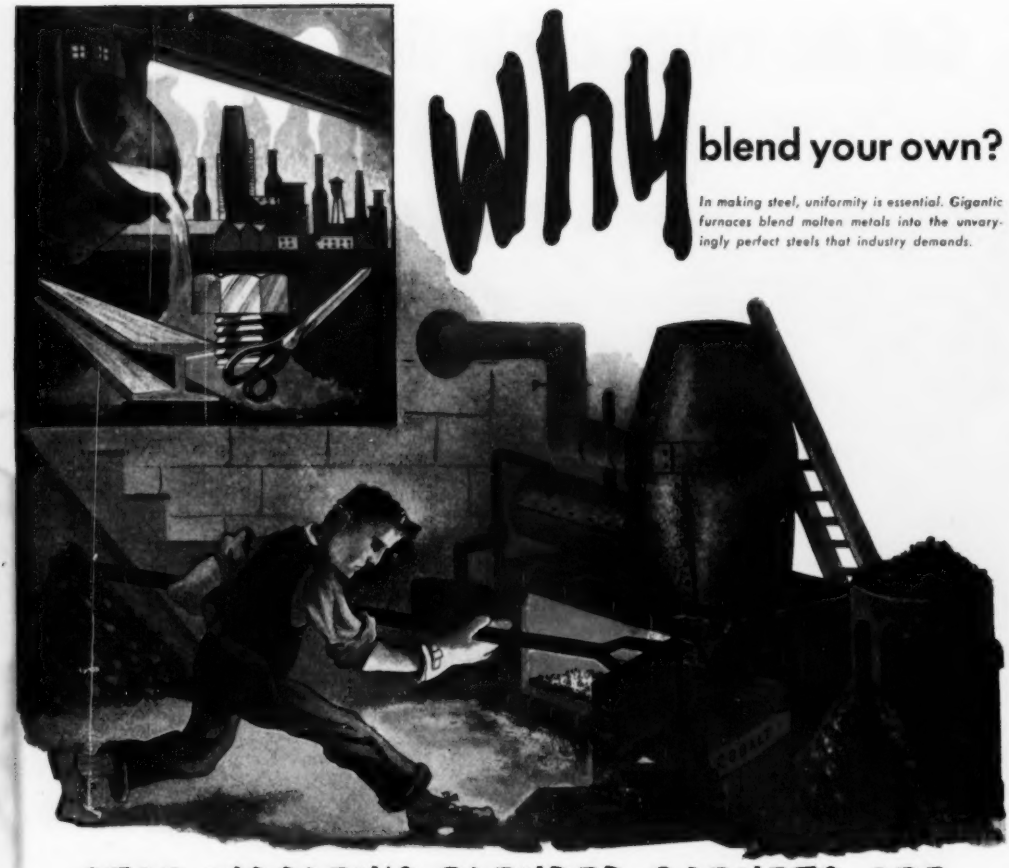

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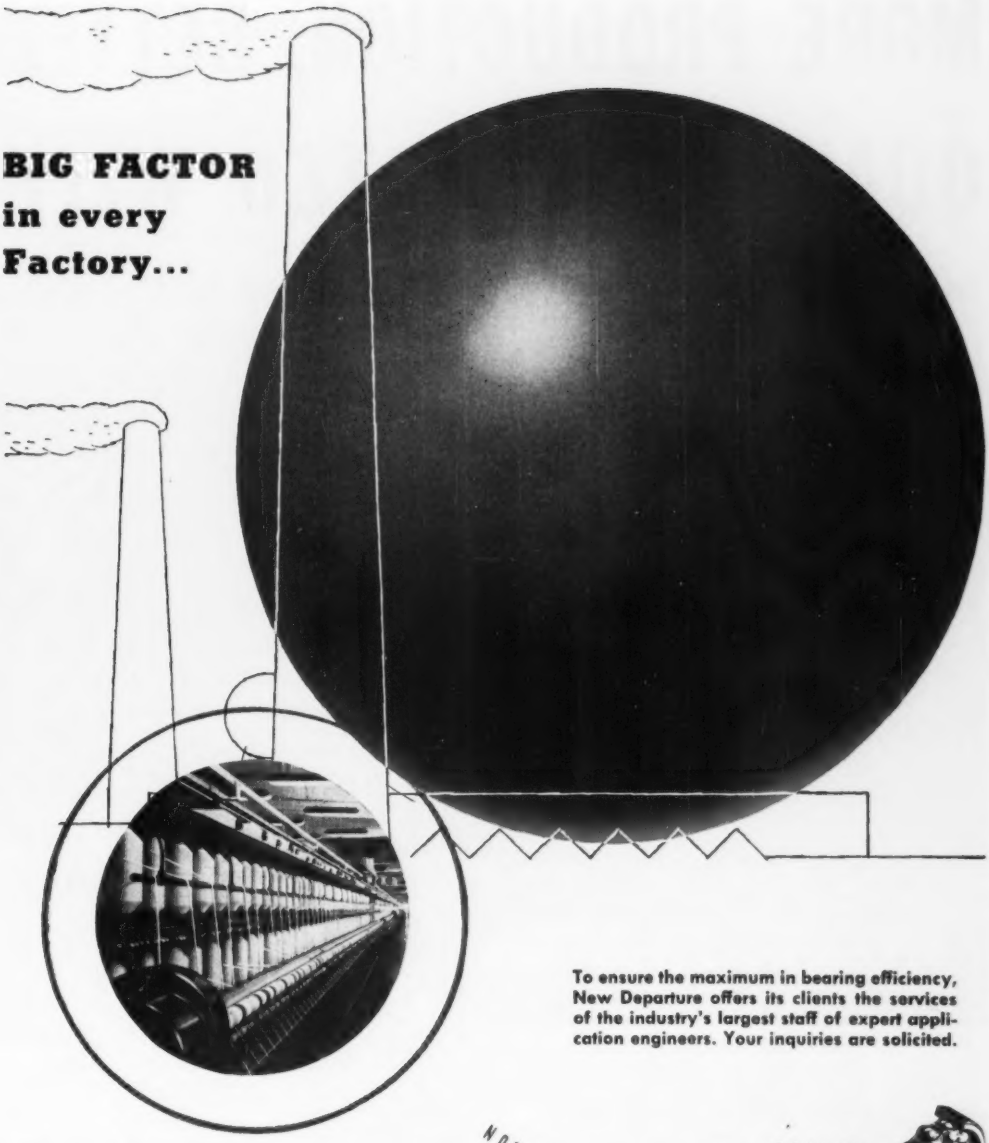

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The Great Ball of New Departure is your guide to *top quality* in ball bearings—*top service* in ball bearing application. That's why New Departures are such a tremendous factor in the textile industry—reducing costs as they reduce friction. Machines start more easily—carry their loads more efficiently—preserve their precision through a longer useful life—because of New Departure's balanced design.

Every textile mill can profit through the superior performance of New Departures. Keep your eye on the BALL . . . to be sure of your BEARINGS.

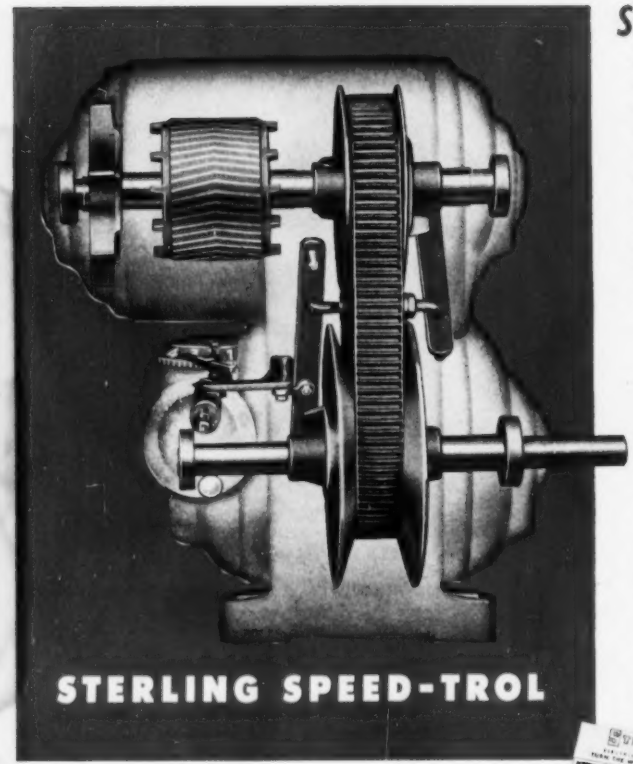
NOTHING ROLLS LIKE A BALL

NEW DEPARTURE

BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT

MORE PRODUCTION, BETTER QUALITY REPORTED WITH



STERLING SPEED-TROL!

Since driving our Butterworth coated fabrics cloth calender with Speed-Trol, we are producing cloth having a better luster... machine output has been increased... and we have increased sales and profits by producing a higher percentage of Grade 1 fabric, reports H. B. Odell of The Odell Co., Watertown, Mass. These advantages were accomplished because Speed-Trol permits selection of maximum machine speed for the roll temperature and weight of fabric being processed.

STERLING SPEED-TROL GIVES YOU VARIABLE SPEED CONTROL NECESSARY FOR:

EQUIPMENT ADAPTATION TO: Sequence synchronization—operators' abilities—load variations due to differences in quantity, quality, weight, size, tension, hardness or shape of material to be processed, machined, conveyed, blended, mixed, etc.

PROCESS CONTROL OF: Temperature—viscosity—level—pressure—flow—etc.

TIME CONTROL OF: Baking—drying—heating—cooking—pasteurizing—soaking—chemical action—etc.

With Speed-Trol you get the maximum in production, plant efficiency, quality and profit.

OTHER STERLING ELECTRIC POWER DRIVES:

- STERLING SLO-SPEED (GEARED) MOTORS
- STERLING KLOSD AND KLOSD-TITE (NORMAL SPEED) MOTORS

DRIP-PROOF • SPLASH-PROOF • TOTALLY ENCLOSED

70 ILLUSTRATIONS showing how Sterling Electric Power Drives reduce production costs. Write for Bulletin No. B 109

OUTSTANDING FEATURES:

Infinite speeds—positive speed regulation—fingertip control—large indicator—positive pulleys—no springs—belt tension in proportion to load—protected—streamlined—Herringbone Rotor—through ventilation—versatile mounting—NEMA dimensions—shock absorbing—quiet operation—rugged—compact—dependable—long life.

STERLING ELECTRIC MOTORS

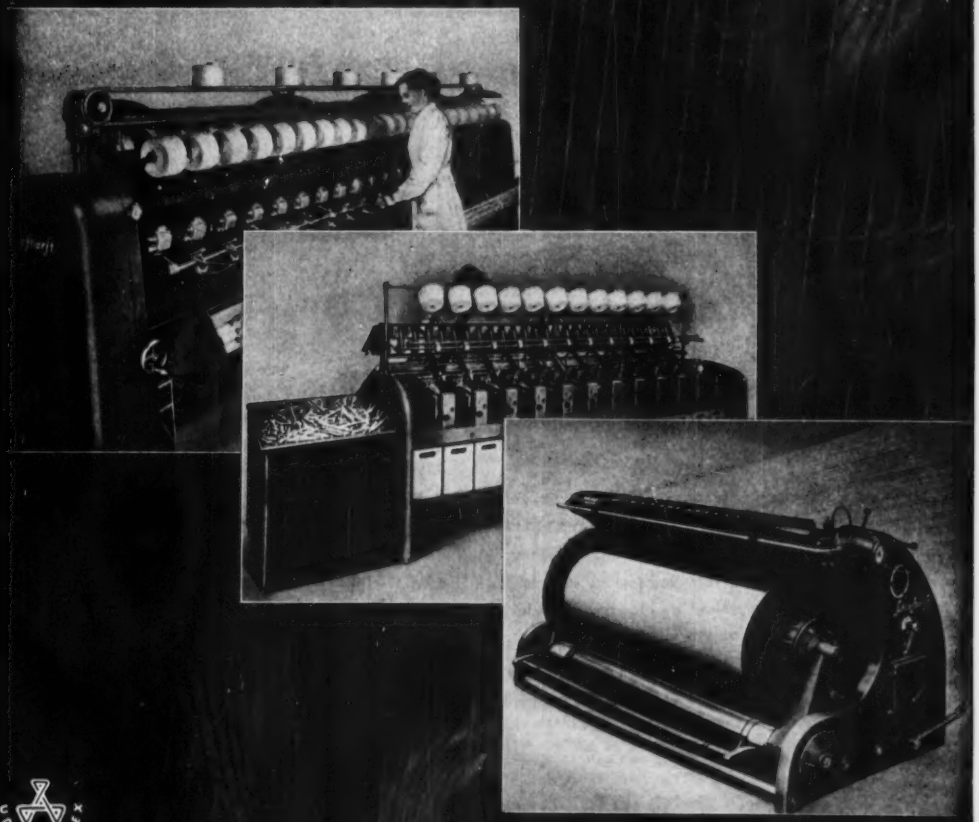
Plants: New York City 51; Van Wert, Ohio; Los Angeles 22; Hamilton, Canada; Santiago, Chile.

Offices and distributors in all principal cities.

For more information, write direct or use Reader Service post card.

MACHINERY FOR WINDING AND WARPING

Schlafhorst



UNIONMATEX

MAKERS:- W. SCHLAFHORST & CO., M. GLADBACH, GERMANY

for faster, easier stripping use

TUFFER Hand Cards clean your rolls quickly with firm, yet flexible, teeth! They bite smoothly and evenly—their strength and durability mean greater stripping efficiency, less effort and arm strain, and less time lost for stripping! Whether it's Midgley's Improved or Howard's Special, you're using the best when you use TUFFER Hand Cards.

Midgley's Improved Hand Stripping Card

Indestructible backs and handles . . . Steel clamps protect edges of the card and hold them securely to the back.

Howard's Special Hand Stripping Card

Ruggedly constructed. Made of three-ply indestructible wood for strength and lightweight. Pressed steel handle.

TUFFER PRODUCTS Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards.

HOWARD BROS. MFG. CO. WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Georgia and Gastonia, N. C. **Branch:** Philadelphia, Pa.

Direct Representation in Canada

A-7

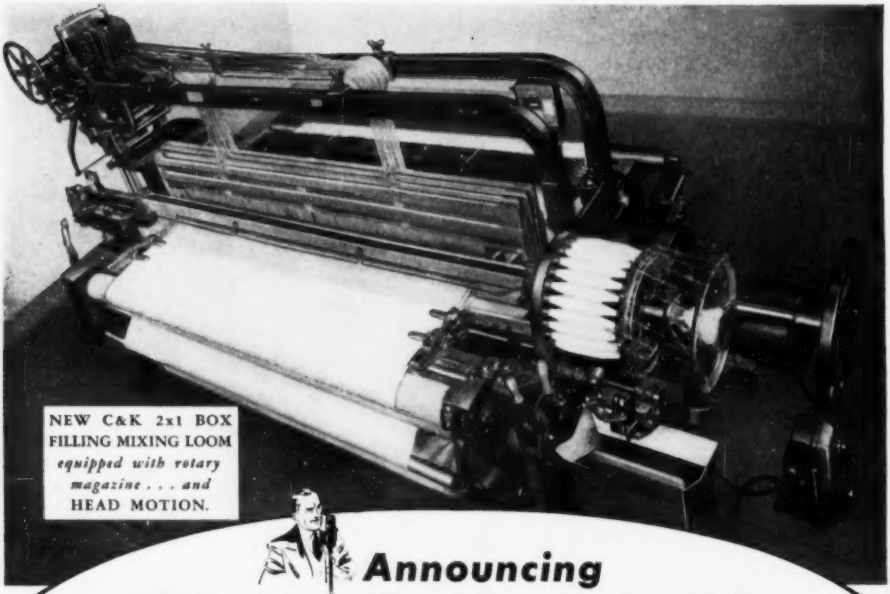
. . . IT PAYS TO SPECIFY TUFFER CARD CLOTHING

For more information, write direct or use Reader Service post card.

Returning the kickoff for a touchdown is a difficult feat . . . but we did it. From its introduction, our new pressure bleach, boil-off and dye machine has scored in truly All-American fashion. Its success in the dyeing and finishing of all tricot, marquisettes and lacey fabrics has been outstanding . . . its performance remarkable.

Burlington ENGINEERING COMPANY, INC.

TELEPHONE 6-4478 BURLINGTON, N.C. **GRAHAM, N.C.**

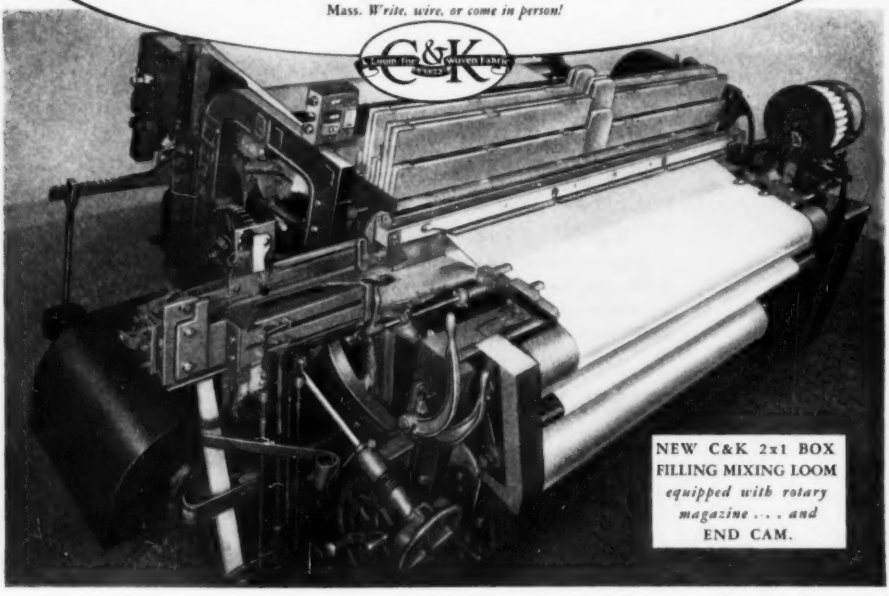


NEW C&K 2x1 BOX FILLING MIXING LOOM *equipped with rotary magazine . . . and* HEAD MOTION.

Announcing

NEW ADDITIONS to C & K's *Long-Established Line of* FILLING-MIXING LOOMS

Here's what you have expected . . . the natural result of C&K's long experience in designing filling-mixing looms. These new 2x1 box, single-color, high speed, rotary magazine looms can be built for any type of fabric construction . . . with any type of shedding mechanism . . . head motion, dobby or end cam. And now *you* are invited to "See C&K", and to get the whole story straight from World HQ for FM Looms . . . CROMPTON & KNOWLES, Worcester, Mass. *Write, wire, or come in person!*



NEW C&K 2x1 BOX FILLING MIXING LOOM *equipped with rotary magazine . . . and* END CAM.

For more information, write direct or use Reader Service post card.

Timesaver for Mill Drives

To help textile mills cut down-time on drives caused by need for V-Belt replacements, the G.T.M.—Goodyear Technical Man—developed Goodyear's Textile Special V-Belt.

Mills everywhere report its success—because this belt handles high starting torques, heavy shock loads, sheave misalignment and uneven load distribution, thanks to the G.T.M.'s ability to design for the job. Ask the G.T.M. about Textile Special V-Belts, available in all popular mill sizes. Or write Goodyear, Mechanical Goods Division, Akron 16, Ohio.

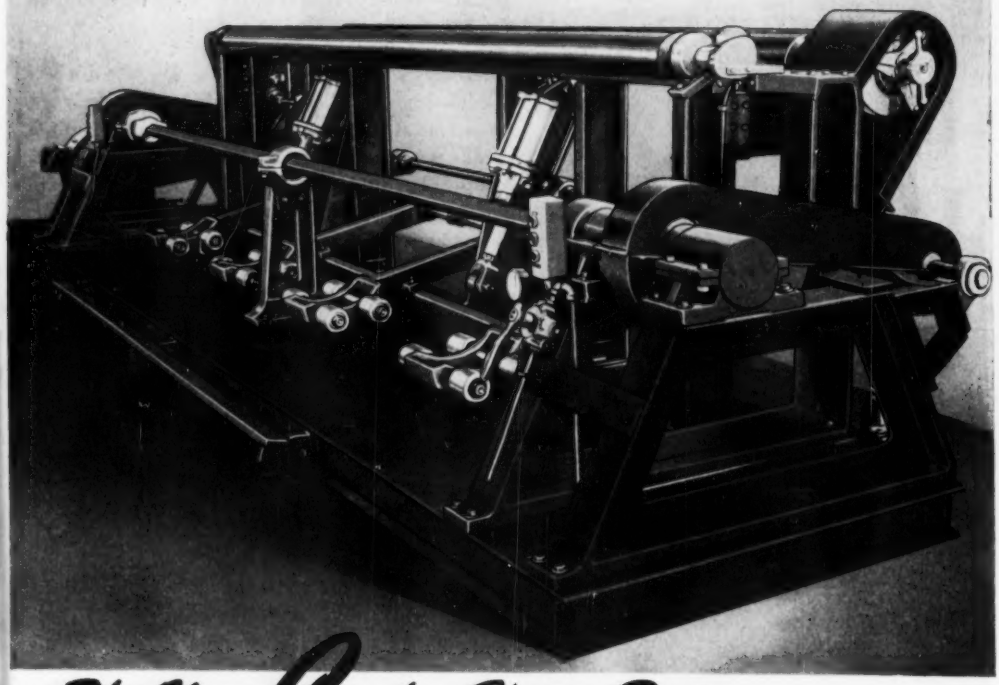
GOODYEAR INDUSTRIAL RUBBER PRODUCTS
GTM-Specified
TEXTILE SPECIAL V-BELTS
A Multiple-ply, bias-cut fabric envelope minimizes wear on surface
B Multiple-ply cord fabric strength member for elasticity and greater strength
C Gum cushion in compression section

LOOK FOR YOUR GOODYEAR INDUSTRIAL RUBBER PRODUCTS DISTRIBUTOR *in the yellow pages of your Telephone Directory under "Rubber Products" or "Rubber Goods." He handles Hose, Flat Belts, V-Belts, Molded Goods, Packing, Tank Lining, Rubber-Covered Rolls built to the world's highest standard of quality.*

GOODYEAR

THE GREATEST NAME IN RUBBER

New • High Speed • Larger Beams • Harder Beams



The New Cocker Heavy Duty Rebeamer for Unsized Warps

This Rebeamer is faster and will handle larger and harder beams than previous machines. It was especially designed for the carpet trade and is adaptable for heavy duck and other heavy beaming.

Shown is 144" Heavy Duty Beaming Machine, built to take one 144" Beam, two 72" Beams, one 108" Beam, two 54" Beams or four 36" Beams.

Machine is driven by DC Motor with converter provided. It operates at speeds up to 150 yards per minute with constant yarn travel and will take a Loom Beam with flange diameter up to 36".

Presser Rolls are controlled by large Air Cylinders to assist in forming firmest possible Beam. Machine is provided with Drag Rolls with special geared friction braking device. One Comb is furnished. Extra heavy frames and bearings assure long trouble-free operation at high speeds. All electrical controls furnished.

Write or wire for full information.

THE LEADER AROUND THE WORLD

COCKER Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

VOGUE says

Yellows

—on the way in

Sandoz has the dye you need

FOR WOOL PIECE DYEING

Xylene Light Yellow 2G
or for better fastness to perspiration . . .
Xylene Fast Yellow 2GP

FOR DYEING WORSTED TOP OR WOOL RAW STOCK, AND FOR SILK PIECE DYEING

- Xylene Milling Yellow 3GL Pat.

FOR SPUN OR FILAMENT VISCOSE DRESS GOODS, PLAIN OR WHITE DISCHARGEABLE

- Pyrazol Discharge Yellow G

For spun viscose requiring maximum fastness to washing and perspiration and aftertreatment with urea-formaldehyde, Sandoz recommends CUPROFIX YELLOW GLE or RESOFIX YELLOW GL aftertreated by the combined CUPROFIX/Resin method.

For forecast colors as well as perennial favorites for both natural and synthetic fibers, select from the Sandoz line of chrome, acid, acetate, direct dyes and auxiliary chemicals: detergents, dyeing assistants, finishes.

You can depend on Sandoz to provide the best colors to meet your specified requirements.

SANDOZ

thinks ahead with textiles

SANDOZ

SANDOZ CHEMICAL WORKS, INC., 61 Van Dam Street, New York 13, N. Y. Sales Offices: Boston, Providence, Fairlawn, N. J., Philadelphia, Charlotte, Chicago, Los Angeles, Montreal, Toronto.

Three Products that Solve Three Problems

on wool, cotton, and man-made fibers

- *scouring*
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- *wetting out*

Sandopan TN

scouring efficiently alone
or in combination
with soap or alkali . . .
excellent in scouring, boil-off,
kier boil, and for soaping-off,
vats, and naphthols

Sandopan TFL

disperses dyestuffs and
simultaneously prevents
the formation of dye specks . . .
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for instantaneous and even
wetting from 70° F to 200° F
offers fastest way to move
goods from the loom to the
finishing department

These Sandoz products can be used singly or in combination.

Send for your copies
of these new Sandoz booklets:

SANDOPAN TN
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SANDOZ Chemical Works, Inc., 61 Van Dam Street, New York 13, N. Y. *Sales Offices:* Boston, Providence, Fairlawn, N. J., Philadelphia, Charlotte, Chicago, Los Angeles, Montreal, Toronto.

SANDOZ *thinks ahead with textiles*

SANDOZ

Tight Squeeze Between Spinning Frame and Drive No Longer a Problem!

HERE'S NEW CONVENIENCE for textile mills! Problem of sheave adjustment caused by placing drive close to spinning frame is now licked. New sheave can be adjusted easily from motor side.

Hand in hand with this improvement is a change to special locking and adjusting screws with a through-hole in the head of each. This permits use of a straight round lever rod. Eliminates fumbling with a screw driver, and makes speed adjustment easier than ever before.

In addition, this new wide range *Vari-Pitch* sheave is now the fastest mounting sheave of its type on the market. It is supplied with the easy-on easy-off *Magic-Grip*, tapered sleeve bushing with tight clamp fit the full width of the sheave.

PROVED IN OPERATION

A large number of these sheaves are now providing trouble-free service and new standards of accessibility on spinning frame drives.

Get complete engineering data. Call your nearby Allis-Chalmers distributor or district office, or write Allis-Chalmers, Milwaukee 1, Wis.

Vari-Pitch and *Magic-Grip* are Allis-Chalmers trademarks.

HOW IT WORKS

Stop drive and release belt tension. Release sheave mechanism by loosening just one locking screw, using lever rod. Then adjust pitch diameter by turning adjusting screw with rod. Retighten sheave mechanism; readjust belt tension.

GET COMPLETE FACTS

Allis-Chalmers
Milwaukee 1, Wisconsin

Please send me complete engineering information 2057811.

Name .....

Title .....

Company .....

Street .....

City ..... State .....

A-3826

ALLIS-CHALMERS

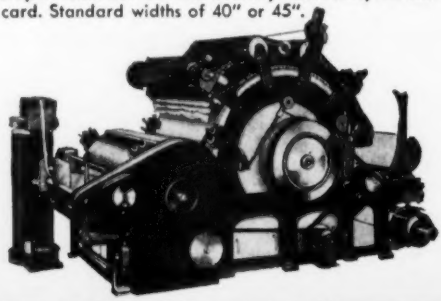
basic

You're in business to make money and *the efficiency of your machinery has a lot to do with profits.* Platt machines are developed in co-operation with the world famous T.M.M. Ltd. spinning research laboratory, built to rigid specifications and **proven in mills throughout the world.** This is the type of machinery that is basic to the successful operation of a cotton mill: highly productive, economical and of long life. Atkinson, Haserick would be glad to show you the proof.

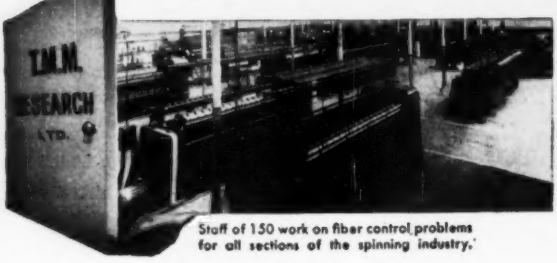
basic CARDING

EVEN, NEPLESS WEBS . . . . . .

With Platt's Revolving Flat Card, accurate settings are easy to obtain and hold, insuring the production of an even, nepless web for both light and heavy carding. There is an exceptionally strong cross rail construction and rigid foundation. Vibration is virtually eliminated and air currents minimized. Cut staple fibers can be worked very successfully on this card. Standard widths of 40" or 45".



PLATT BROS.
(SALES) LTD.
OLDHAM, ENGLAND



Staff of 150 work on fiber control problems for all sections of the spinning industry.

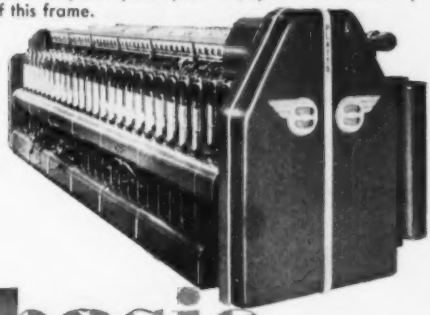
Laboratory provides continual information on all processes from bale to plied yarn.

For more information, write direct or use Reader Service post card.

basic TO ROVING

FIBER AND TWIST CONTROL...

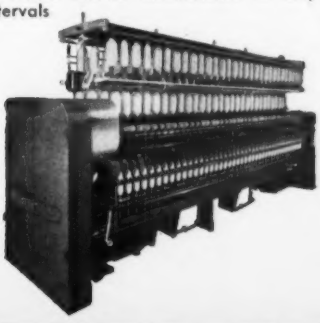
The new Platt M.S.2 High Draft Roving Frame operates with great efficiency at high speeds. Three drafting zones give unprecedented fiber control through a wide range. A stronger roving is formed by inserting more of the total twist close to the nip of the front roll. The firm roving sheds little fly. You will be impressed by the quiet operation, speed and efficiency of this frame.



basic TO SPINNING

LARGE PACKAGES, HIGH SPEED...

The Platt M1 Ring Spinning Frame is a practical, proven frame for large packages. It has a choice of high drafting arrangements and a new spring arm roller weighting that adjusts to a wide range of staple lengths without altering the nip pressure. The simplified headstock has central lubrication, few gears and flexibility of turns per inch. Roller bearing spindle needs routine maintenance at only 2,500 hour intervals



Actual conditions in opening, picking, carding and spinning rooms are reproduced in the laboratory.

a management responsibility

Don't you owe it to your mill to investigate ALL the new processes, new fibers, new machinery. A visit to our Charlotte display rooms would be time well spent. We are engineers and agents for some of the finest machinery developed in England.

a.h.

Atkinson, Haserick & Co.

Textile Machinery Agents and Engineers Since 1823

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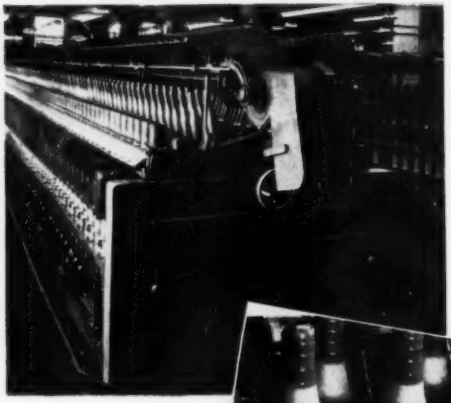
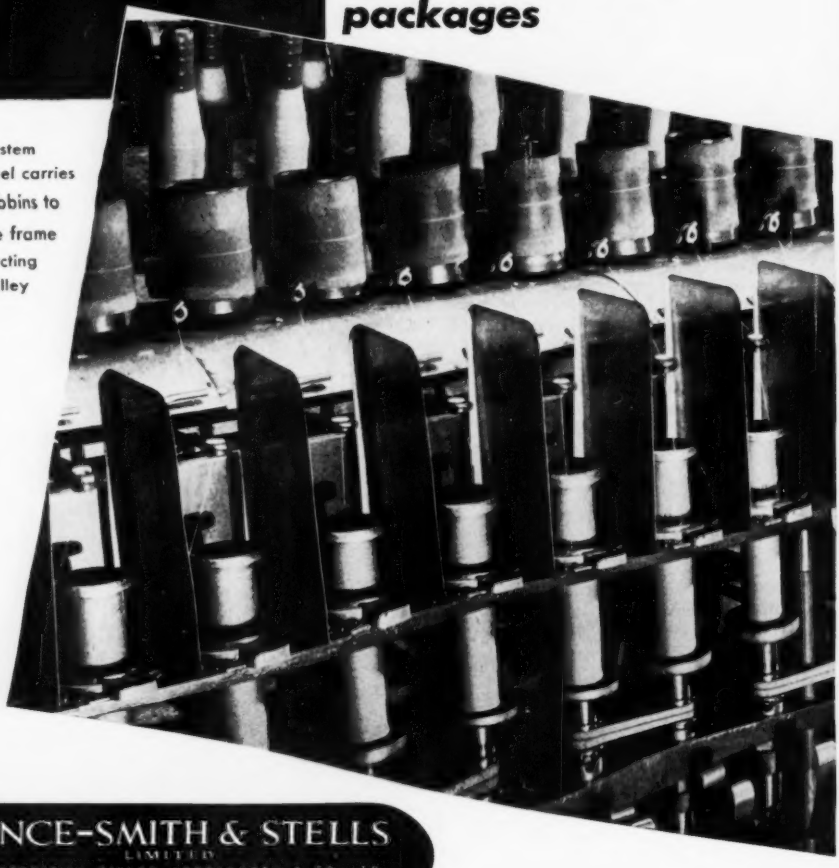
Twist Large Packages of



Prince-Smith & Stells improves 2-fold ring twister for fine count worsted yarns on large packages

A conveyor system above the creel carries the empty bobbins to the end of the frame without obstructing the working alley with trucks.



PRINCE-SMITH & STELLS
LIMITED
INCORPORATING TAYLOR ROBINSON & CO. LTD.
KEIGHLEY ENGLAND

U.S.A. Agents for French System Machinery: Blake Electric Mfg. Co., 43 Commercial Wharf, Boston 10, Mass.

For more information, write direct or use Reader Service post card.

Fine Counts

IF YOU do two-fold twisting of worsteds, you will find this a very practical machine. It will give you all the time-saving advantages of large packages, together with full twisting control for even fine counts. Increasing the size of the dolly rolls to a 3″ diameter gives a more accurate tension control and consequently a better yarn. New type spindles eliminates vibration and increases speeds. They require lubrication at only 2,500 hour intervals thus reducing the hazard of oil in the yarn area. Ball bearing tension pulley assemblies save power and tape wear. An adjustable change speed device permits quick alteration of spindle speeds. Combination creel allows you to run from either bobbins or large cones interchangeably. A simplified, rail lifter motion (each side separate) affords accurate, easy alterations for fine or coarse counts. The entire machine is designed for years and years of low maintenance service. For further information please contact Atkinson, Haserick & Co.

ABSORBS VIBRATION

The new Hoffman roller bearing spindle insert has a spring and sleeve which absorbs vibration between the rail and the bolster. The free running spindle uses less power and reduces tape slippage. The knee brake mechanism lifts the complete spindle unit from its normal position causing the top flange of the whorle to make contact with a stationary brake shoe.

WE ARE INDEBTED TO THE CLEVELAND WORSTED MILLS CO. FOR THE PHOTOS

NOTICE

TO OWNERS OF

ATKINSON, HASERICK & CO.

MACHINERY

You can secure revised recommendations for aprons, bobbins, card clothing, fallers, rings, screws, etc. for all machinery you have purchased from Atkinson, Haserick & Co. May we suggest that Purchasing Agents review specifications of their mill supplies with one of our engineers. These engineers are continually working with your type of machinery. Their recommendations for even slight changes in parts or usage can often produce gratifying results.

Atkinson, Haserick & Co.

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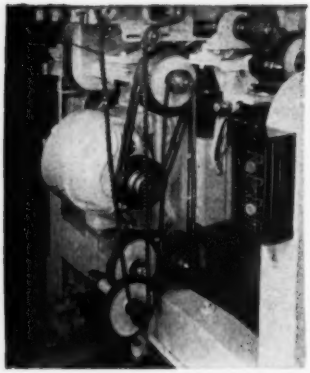
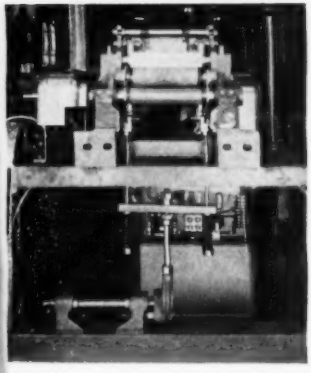
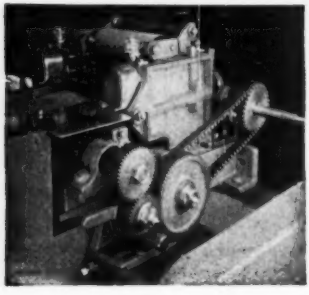


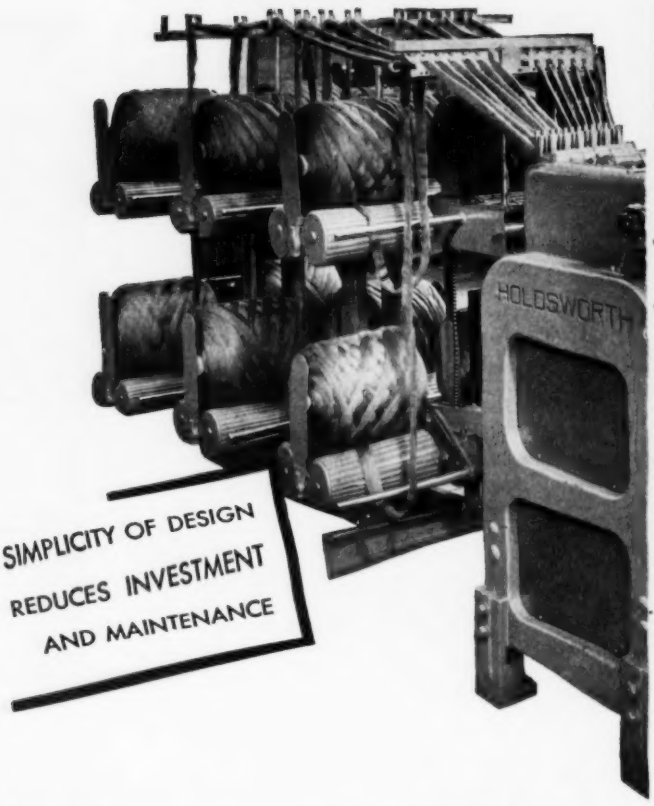
INDIVIDUAL MOTOR DRIVE View of the back of the frame shows how compact and accessible is the variable speed drive.



DRAWING OFF ROLLS & ROLLER WEIGHTING The simple, quick relieving, roller weighting is shown together with the front rolls and electrical control panel.

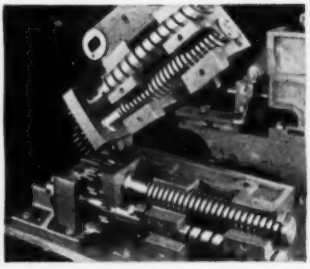
CHANGE GEARING These are the only change gears in the entire machine and are easily accessible for quick changing. Note the sturdy construction.



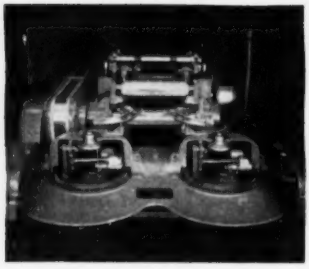


SIMPLICITY OF DESIGN
REDUCES INVESTMENT
AND MAINTENANCE

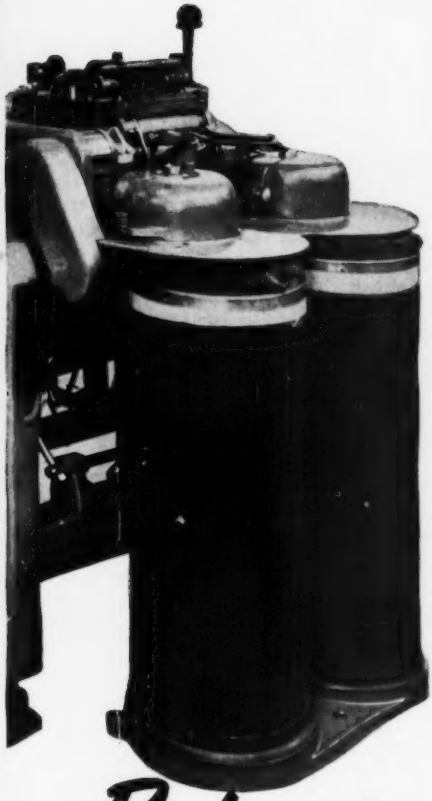
Holdsworth Gill



HEAD OPENED, STILL IN TIME Head may be opened for cleaning or inspection without disturbing the timing. The sturdy screw blocks are shown with Holdsworth one piece screws and patented Holdsworth cams. These screws will transport the famous Holdsworth fallers that have solid steel middles drilled for replaceable pins.



IMPROVED COILER HEADS The coiler head is opened here to show the simplicity of the new, improved mechanism. Sliver guides and two of the four push button controls can be seen in this view. The Holdsworth Gill Reducer is also made with a balling head if desired. (Ball creel is shown in main illustration: can creel is available.)



Reducer

FOR WOOL, SYNTHETICS & BLENDS

There are fewer working parts in a Holdsworth Gill Reducer — Fewer parts to maintain. Fewer parts to wear. Fewer parts to purchase. Yet the ruggedness and good machining of these parts allows the taking of two ends through one head. If you will consider these advantages in relation to your mill, perhaps you will want to see these Reducers in action. Wire us collect to locate the installation nearest to you.

HOLDSWORTH
GILL SCREW CO., INC.
PLANT: 55 SABIN STREET
PAWTUCKET, R. I.

48 Hour Service

REPAIRING GILL SCREWS

Send Holdsworth Screws to be repaired direct to the plant, 55 Sabin St., Pawtucket, R. I. Within 48 hours we will send you a screw expertly repaired and of true pitch. We also repair all types of fallers.

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Textile Machinery Agents and Engineers Since 1823

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New
ALLIS-CHALMERS
Textile
Drives
Guard Removed
New Allis-Chalmers card drive is Allis-Chalmers totally-enclosed, non-ventilated motor driving Falk right angle gear reducer through *Texrope* V-belt drive and centrifugal clutch. Separate sheave provides power for stripping cylinder and doffer. Complete drive mounts on card shaft.

CARD DRIVE

Compact

Requires practically the same floor space as an overhead belt drive. Drive is mounted directly on card shaft with torque arm to keep it in position. No strain on card arch to cause vibration or distortion.

Reduces Maintenance Costs

No heavy, expensive belts to wear out. No periodic belt dressing. Each machine can be shut down independently for maintenance or changeover instead of a whole bay. Vibrationless drive increases life of all parts and makes machine easier to keep in adjustment.

Cleaner Operation

No sticky belt dressing to catch dirt. Won't throw oil and dirt into material to cause low quality goods or rejects.

Uniform Speed

Drive unit locked tightly to shaft. No slip to cause speed variations and low quality product.

Safer

No belt to catch hands or clothing, especially during grinding and cleanout.

ARE YOU STILL USING OVERHEAD BELT DRIVES on your cards because no one has come out with a good card drive that can be installed at a reasonable price? Well, here is the card drive you have been looking for.

You don't have to move your cards to install this drive. It will fit in the same space as your present drive. And it's easy to install. Simply fit the Falk gear reducer on the shaft and attach a torque arm to keep it in position. Stripping procedures are almost the same as with your present drive. The savings in lower maintenance costs, more production and higher quality goods will soon more than pay for the new drive.

Think how much neater, lighter and more efficient your plant will be, too, without that forest of shafting and belting hanging from the ceiling. Ask the Allis-Chalmers representative to show you what new card drives will do for your mill. Or write Allis-Chalmers, Milwaukee 1, Wis., and ask for Bulletin 51B7867.

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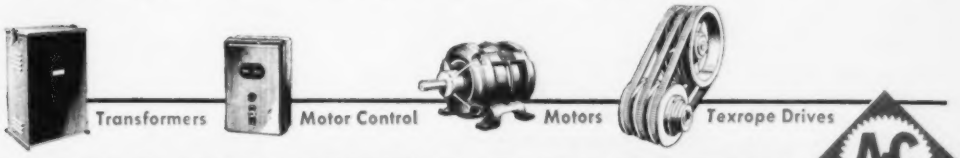

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Since stainless *is* so valuable, plan to make it go further.

Specifically, this means selecting a grade or finish of stainless that, besides doing the job adequately, will be in less demand than one you have been figuring on.

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. . . of corrosion . . . of power consumption in weave rooms
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In addition are discussions on lubrication, maintenance and installation . . . on centralized motor control. In fact, it is the purpose of this booklet to analyze major motor and control application problems and provide solutions.

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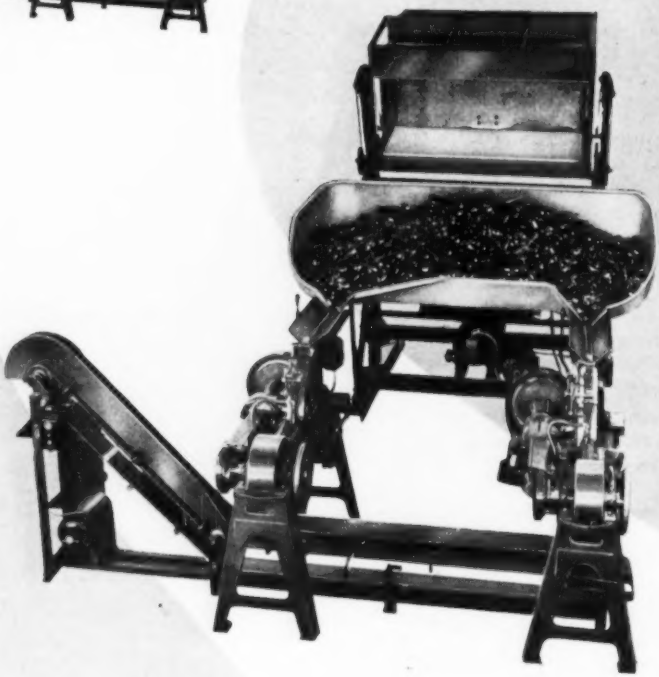

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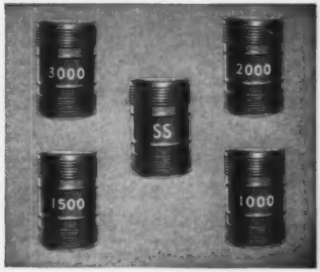
After analysis, S/V engineer prepares report, with recommendation of correct wool oil.



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NEW ECONOMY...**NEW** CLEANLINESS

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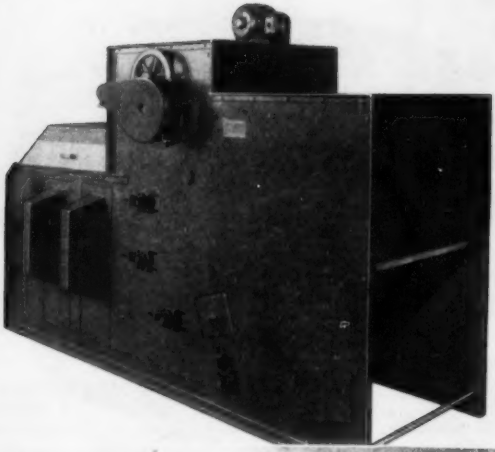

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● Extensive production use has proven that the UNITINT offers these unusual advantages in effectively controlling the application of fugitive tints to various fibers using either oil or water soluble tints.

...faithful reproduction of desired color shades

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Production rates, up to 1200 pounds per hour, can be accurately regulated to coincide with your picker production or with the rate of delivery from your blending line.

WRITE . . . for new brochure giving the complete story of UNITINT . . . the modern, automatic method for tinting fibers.

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RAPIDOGENS are stable ready to use compositions of Naphtols and diazotized bases selected for best properties, shades and maximum efficiency.

uses: for printing fast, brilliant colors on cotton, rayon and linen.

color range: an extensive range of shades of outstanding clarity and depth—many important shades are exclusively G.D.C.

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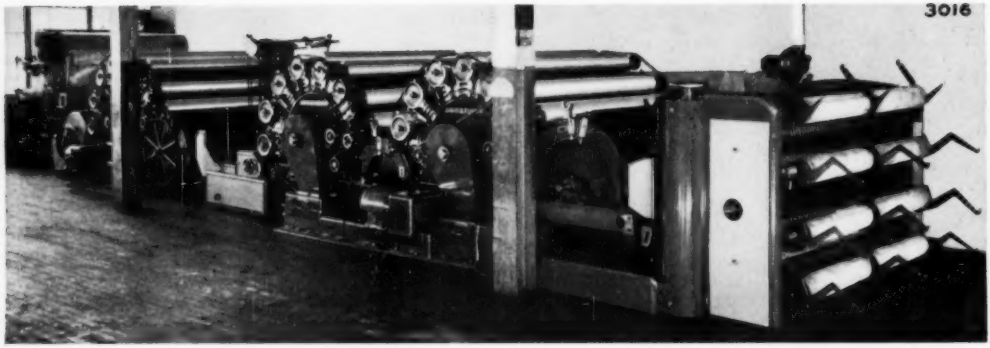

AN 84-INCH MODEL "L"-DAVIS & FURBER WOOLEN CARD

A key point in many mill's modernization program are these big new 84-inch wide woolen cards recently installed by Davis & Furber. Card room reports from these mills already show 192 ends (8 spools of 24 strands each) rolling up record poundage figures hour after hour.

Our many years' experience manufacturing wide cylinder* cards has established D & F machines as efficiency leaders in modern mills throughout the world. But now, in addition to our new 60 and 72-inch Model "L" cards, we are making 84-inch wide cylinders available to the woolen industry. Most important, too . . . this card has been designed to give greater poundage at "same-as-present" operating costs for any stock carded on the woolen principle. Let our D & F engineers study your operations and show you how this new wide card will fit into your own modernization plans. Write us, north or south.

*up to 138 inches

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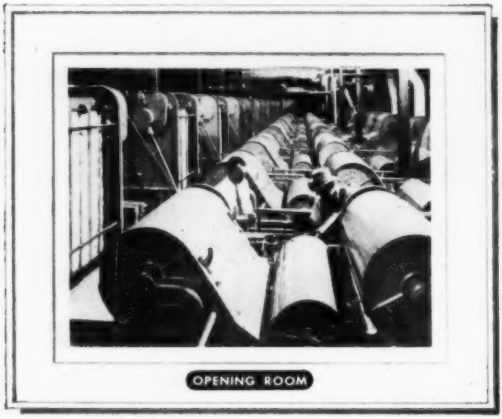
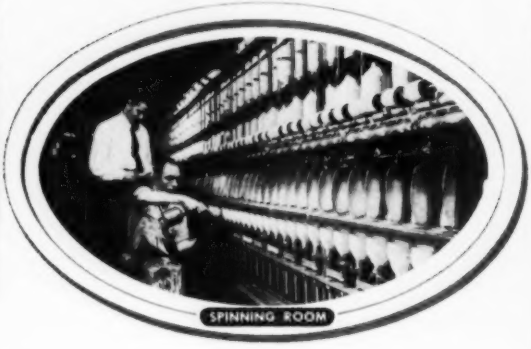
IN EVERY MILL DEPARTMENT


OPENING ROOM

CARD ROOM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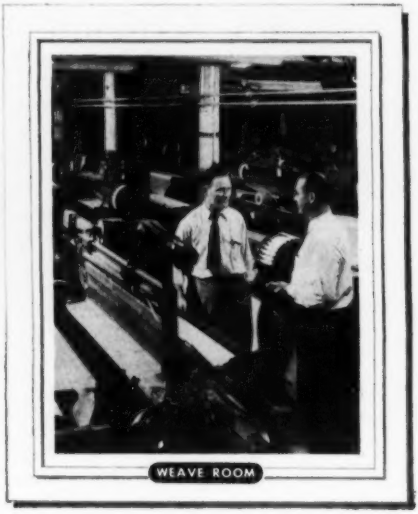
WEAVE ROOM

You'll find that through Gulf Periodic Consultation Service, Gulf Sales and Staff Engineers offer practical help on every phase of lubrication in every room in the mill. For further information on this co-operative service, write, wire, or phone your nearest Gulf office today.

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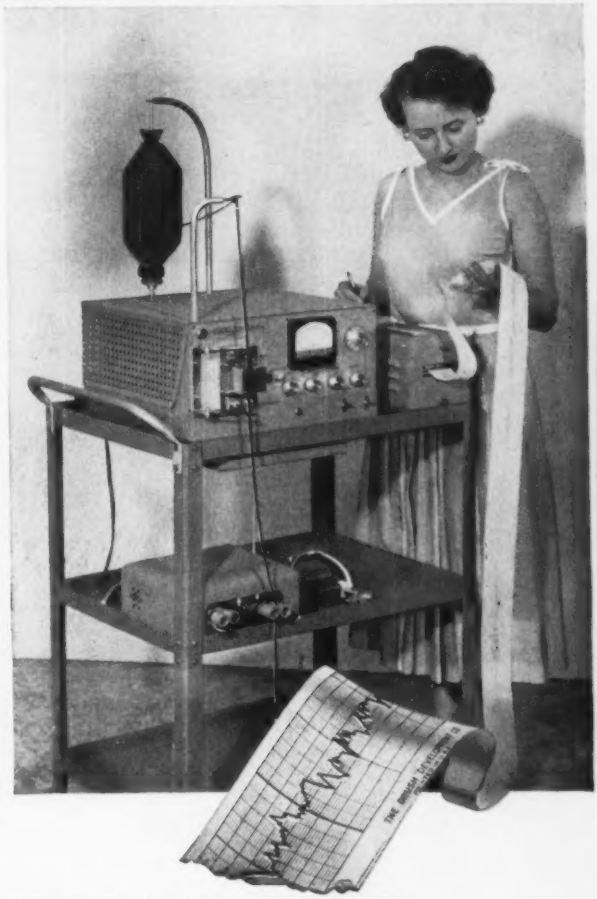
GULF INDUSTRIAL LUBRICATION

GROWING DEMAND FOR UNIFORMITY ANALYZER

brings new Brush "peak performance" service policy to Southeast!



• More and more mills are discovering the important benefits of the Uniformity Analyzer. To assure the peak performance and widest use of this instrument, The Brush Development Company and its Southeastern representatives W. A. Brown & Associates announce a new service policy for the states served by Brown.

This comprehensive policy provides a staff of textile-trained application engineers and service experts. These men will inspect Uniformity Analyzers periodically to make sure that these sensitive instruments are giving most accurate results. They will also assist users in interpreting and applying data to the mill's problems. In case of emergency, they will provide 24-hour service.

The new expanded policy applies to all new orders for Uniformity Analyzers in Southeastern states. It also will be available in the near future for existing installations in that area. In other regions, Brush technical assistance and service will be available as usual for all users of Uniformity Analyzers.

For full information, write The Brush Development Company, Dept. GG-37, 3405 Perkins Avenue, Cleveland 14, Ohio.

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THE *Brush* DEVELOPMENT COMPANY

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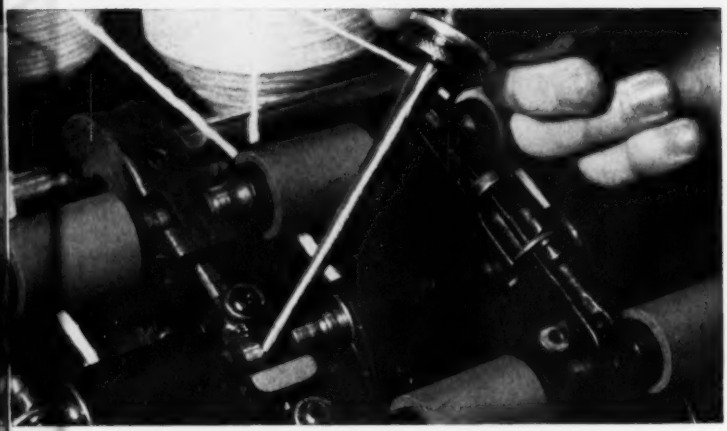
SMOOTH FINISH. Accotex Aprons are smooth as satin. Each is ground to the exact thickness you specify and then given Armstrong's patented finishing treatment for lasting smoothness and scuff resistance.

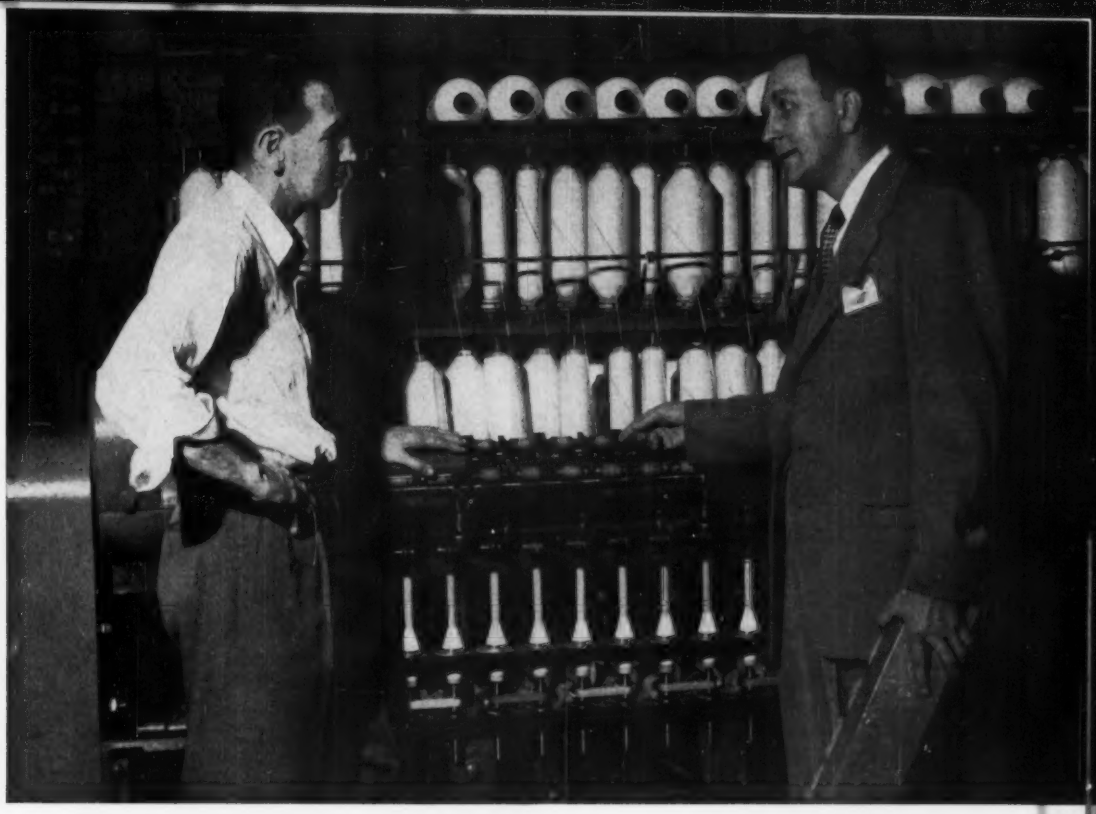


CLEAN RUNNING. Accotex Aprons don't absorb oil or soften from exposure to dyes or commonly used textile solvents. They won't sweat and won't pick up lint. That's why Accotex Aprons run clean for years. Try them on a test frame and see.

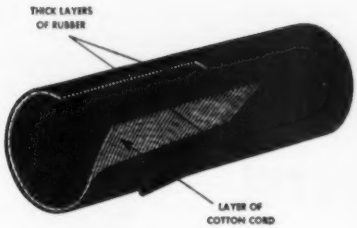
SUPER FLEXIBLE. This Accotex NO-750 is specially made for single-apron frames. It has the extra flexibility needed to hug the nose bar tightly. Its seamless construction assures good drafting and smooth slip-roll action.

ARMSTRONG'S ACCOTEX APRONS

One of Armstrong's complete line of textile mill supplies



Get 6 to 8 years of continuous two-shift spinning with these Accotex Aprons



Here's on-the-frame performance that's hard to beat. In most types of service, you get six to eight years of trouble-free two-shift operation from Armstrong's Accotex® Aprons.

Even better, at the end of that time, under normal conditions, they'll still be smooth, flexible, and clean running.

This kind of long, consistent service is not unusual. In fact, if you are not using these modern synthetic aprons, you can double the apron life you now get by using Armstrong Accotex Aprons. Accotex Aprons spin long and well because of their patented three-layer construction, as shown at the left.

The seamless outer layer is made of a synthetic rubber that's chemically treated to resist scuffing and stay smooth for years. The strong cotton cords in the middle layer prevent any stretching and also guard against curled edges. The inner layer, also seamless, is made of synthetic rubber specially compounded to resist abrasion.

When these three layers are vulcanized together, they form a seamless, one-piece apron that combines toughness and super flexibility with smooth, clean drafting.

For long, trouble-free service, put Accotex Aprons on your frames. To arrange a test installation, call your Armstrong representative or write to Armstrong Cork Co., Textile Products Dept., 8310 Arch Street, Lancaster, Pa. Available for export.

12 years with minimum maintenance and no replacement for these *Stainless Steel* boarding forms

...and few rejects caused by snagging

Final boarding takes place on steam-filled Stainless Steel forms. Equipment was made by Paramount Textile Machinery Co., Chicago, Ill.

Two of the eight pre-boarding machines at Acme Hosiery Dye Works are shown in this picture. Each is equipped with 24 Stainless Steel forms.

● The smooth, dense, durable surface of Stainless Steel makes it the ideal material for textile mill applications where long life, freedom from maintenance and protection of the product must go hand in hand.

These qualities of Stainless Steel are demonstrated dramatically at Acme Hosiery Dye Works, Pulaski, Va., where nylon hosiery takes its size and shape on Stainless boarding forms.

Ten times an hour around the clock Stainless pre-boarding forms are subjected to temperature changes from room level to 252°F. in the steam cabinet. But the 484 Stainless pre-boarding forms at Acme have been in service for 12 years with minimum maintenance and no replacement. And, equally important, few rejects have been caused by snagging on rough metal. The surface of metal forms used previously would roughen with wear, requiring frequent rubbing with abrasives and polishes. But Stainless Steel is smooth to start with and *stays smooth.*

In final boarding, the forms themselves hold the steam. These forms, too, have been in service for 12 years and have kept their smoothness and undistorted shape. In addition, they maintain an even heat over their surface and reduce fluctuations during the operating cycle.

Wherever you need a material that is kind to the fabric, that resists corrosion and abrasion, that keeps maintenance and replacement costs at a minimum, rely on Stainless Steel. And for unmatched performance, insist that your equipment fabricator use U·S·S Stainless Steel.

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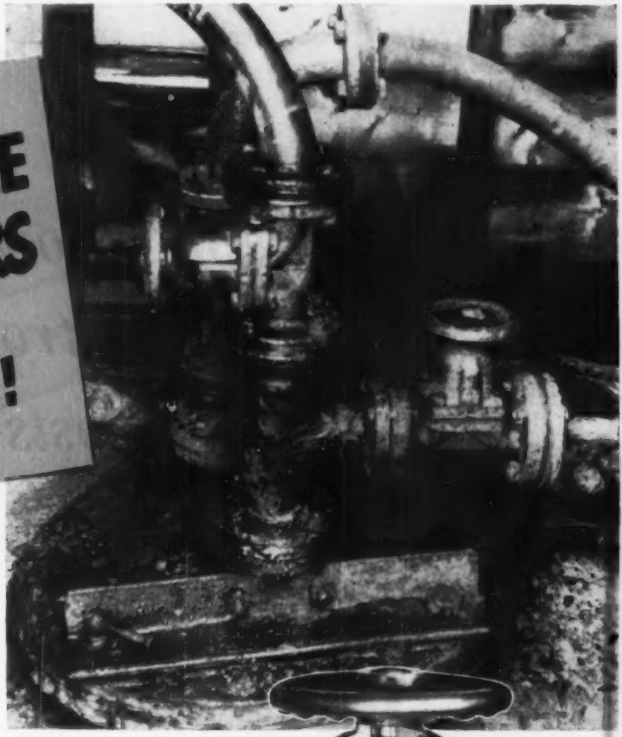
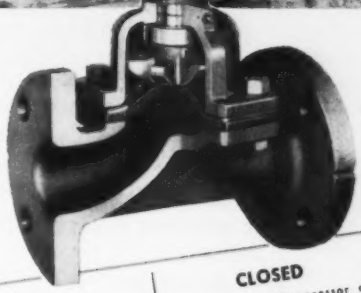
UNITED STATES STEEL

TROUBLE FREE FOR 15 YEARS handling muriatic acid!



Another 'open and closed' case for

GRINNELL-SAUNDERS DIAPHRAGM VALVES

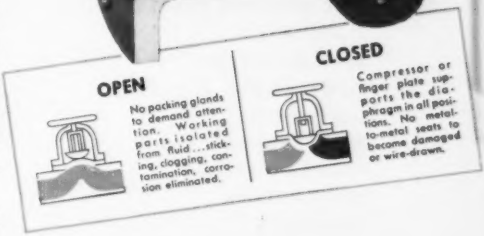


In 1936, a Canadian mine installed Saunders Diaphragm Valves with rubber linings on the feed and drain piping of an underground tank used for the storage of muriatic acid. Today, after 15 years, those *same* valves are in use—having required no maintenance except for periodic replacement of diaphragms, a simple operation done without removing the valve from the line.

Grinnell-Saunders Diaphragm Valves are available in many different combinations. Bodies are made in a variety of metals —iron, stainless steel, bronze, aluminum and others. ***But of more importance*** is the fact that a body of cast iron (a metal not in short supply) can be lined with glass, lead, natural rubber, neoprene and other materials which, in many instances, handle corrosive fluids ***better*** than metals.

Diaphragms come in natural rubber, neoprene, butyl, hycar, a special synthetic for foods and KEL-F. This last is chemically inert to all acids and alkalies in all concentrations with the exception of molten alkali metals.

From this broad selection of materials, the problems which the Grinnell-Saunders valve can solve are extremely varied. No wonder industry after industry is putting it on the line.


OPEN
No packing glands to demand attention. Working parts isolated from fluid...sticking, clogging, contamination, corrosion eliminated.
CLOSED
Compressor or finger plate supports the diaphragm in all positions. No metal-to-metal seats to become damaged or wire-drawn.

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WHENEVER PIPING IS INVOLVED

Grinnell Company, Inc., Providence, Rhode Island • Coast-to-Coast Network of Branch Warehouses and Distributors

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Question:

In how many textile applications can Taylor controls help you cut costs?

Answer:

Twenty-five (*at least*)

It's true! 33 years ago Taylor was the first instrument manufacturer to get interested in the textile business. We introduced the first practical system of Slasher control in 1919. We've grown up with the industry and today we can offer you instrumentation that will save you money on practically any application in your mill from the first phase of processing to the last. Listed below are some of the time-proven Taylor control systems now available:

SIZE COOKING
SIZE STORAGE KETTLE
SLASHING
KIER BLEACHING
CONTINUOUS BLEACHING
TENTERING
PIECE DYEING
PACKAGE DYEING
BEAM DYEING
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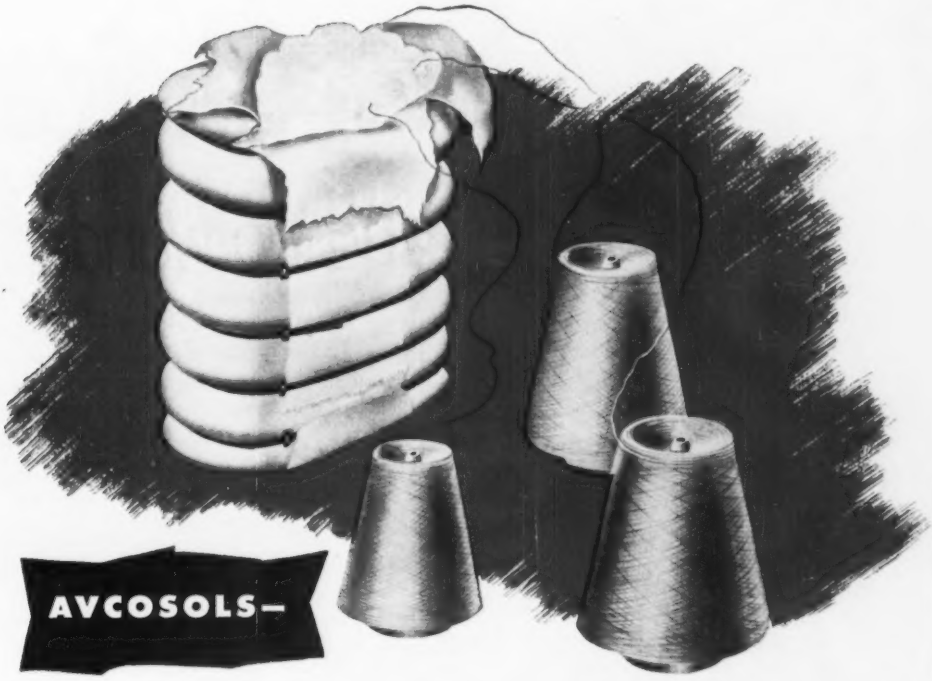
MERCERIZING
SKEIN DYEING
TOP DYEING
JIG DYEING
WOOL SCOURING
CONTINUOUS DYEING
DRYING
CARBONIZING
WASHING
CONTINUOUS CRABBING
PADDING
DECATING
POWER PLANT
AIR CONDITIONING
CAKE SOAKING AND DRYING

Ask your Taylor Field Engineer! Or write Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST



for superior fiber control

Avcosol® 20 and 104 are fiber lubricants and anti-static agents for acrylics, nylon, polyesters, regenerated, and natural fibers. They provide excellent static control and superior fiber cohesion without building up excessive friction. They reduce fly in carding, gilling, drafting, and combing. They are 100% active, non-ionic materials, completely dispersible in water.

Avcosol 20 is a medium viscosity liquid. Its outstanding property is to increase fiber cohesion without sacrificing lubricity. Avcosol 104 is a waxy solid. It increases lubrication without sacrifice of cohesion. Thus it is possible through the use of these materials to arrive at true fiber control.

Avcosols were developed in conjunction with and are manufactured by Atlas Powder Company, Wilmington, Delaware.

Complete technical service and information on the latest research developments will be provided by American Viscose Corporation. For further information, write today—describing your particular end use.

Avcosol: Reg. U. S. Pat. Off.

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First Choice!

and no wonder...

. . . The Dayco Cot's "super" fiber repellence makes it a big hit with millmen—no matter what fibers they're spinning! For whether you spin cotton, wool, blends or synthetic fibers, you'll find the Dayco Cot means fewer lap-ups, fewer ends down, cleaner yarn. And its better wearing qualities make it *outlast* any ordinary roll covering you've ever used.

Here's what *users* say: "Already outlasted the type of cot we were using, and good for years more" . . . "roll replacement is minimized" . . . "They spin perfect yarn right from the go, even on Monday morning startups!"

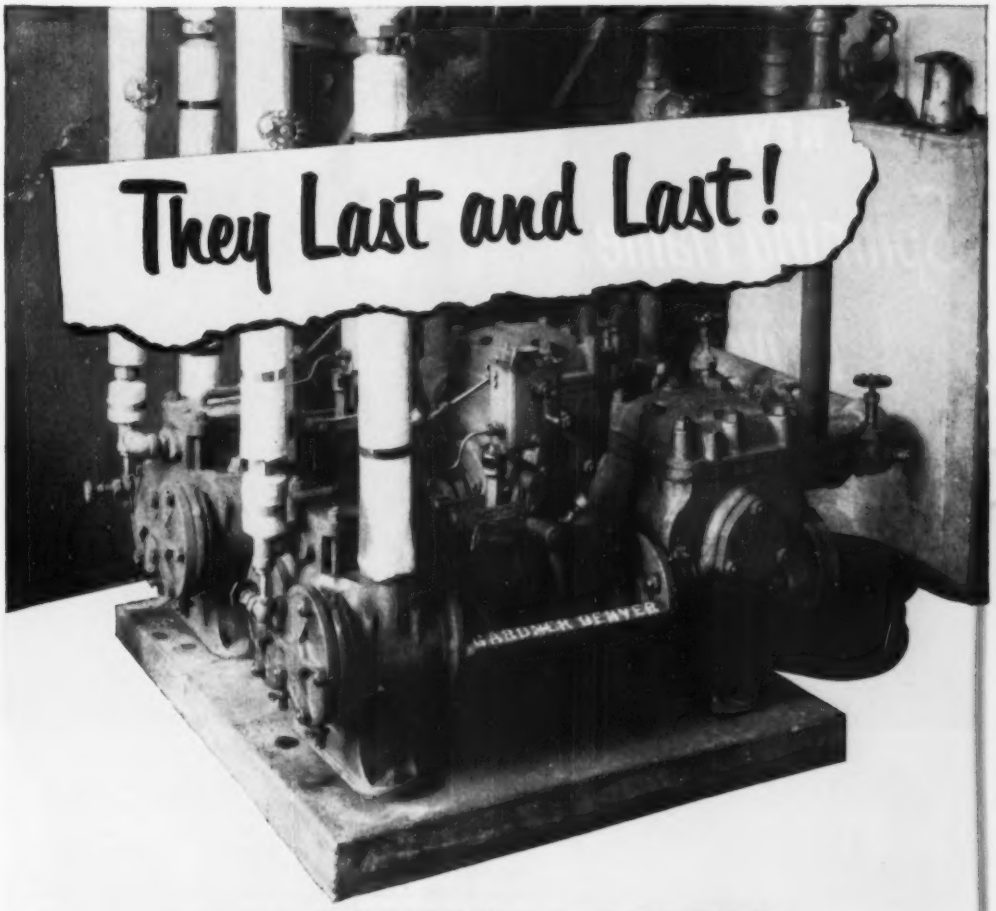
© D. R. 1952

Dayton Rubber

Since 1905

TEXTILE PRODUCTS FOR BETTER SPINNING AND WEAVING

See for yourself—**put Dayco Cots on your frames, for the long pull ahead. Ask your salesman or: Dayton Rubber Co., Textile Div., Woodside Bldg., Greenville, S.C.**



...choose GARDNER-DENVER Duplex Pumps

Perking Along Since 1907

A company in New Orleans installed a Gardner-Denver Duplex Pump in 1907—has been using it ever since. They say it is still the best pump in the mill.

Check these advantages:

- Can be used with either steam or air power.
- Versatile—give you variable capacities, fluid pressures and speeds from the same installation. For example, a 6 x 4 x 6 pump may be operated at 0 to 118 G.P.M. . . . 0 to 250 lbs. fluid pressure . . . 0 to 90 R.P.M.
- Available with removable fluid liners and valve seats.
- May be fitted for abrasive or corrosive service.

GARDNER-DENVER

Gardner-Denver Company, Quincy, Illinois
In Canada:
Gardner-Denver Company (Canada), Ltd., Toronto, Ontario

THE QUALITY LEADER IN COMPRESSORS, PUMPS AND ROCK DRILLS

Atlanta, Ga.; Birmingham, Ala.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.; New Orleans, La.

For more information, write direct or use Reader Service post card.

NEW *Spinning Frame Drive*

CUTS DOWN-TIME ON SPEED CHANGES!

INCREASES PRODUCTION!

The variable sheave in this new drive locks as a unit when tightened on the shaft. It locks and unlocks easily, quickly, with the turn of a screw.

One-point adjustment establishes accurate pitch diameter; cylinder speeds are held within extremely close limits. Changes are made quickly, production is kept at maximum. In rare cases where a change in the companion sheave is required, the famous Dodge Taper-Lock principle makes the change quick and easy.

The slide motor base permits quick changes in center distances to preserve proper belt tension as the variable sheave is adjusted for changes in speed.

Latest design Sealed-Life Belts have deep sidewalls and lateral rigidity for efficient operation.

All components in this new Dodge Spinning Frame Drive are engineered to operate in perfect harmony, assuring a long life of dependable, trouble-free service. Write now for Bulletin A-618 with complete information.

DODGE MANUFACTURING CORPORATION
1400 UNION STREET, MISHAWAKA, INDIANA

DODGE
of Mishawaka, Ind.

Call the Transmissioneer, your local Dodge Distributor. Factory trained by Dodge, he can give you valuable assistance on new cost-saving methods. Look for his name under "Power Transmission Equipment" in your classified phone book.

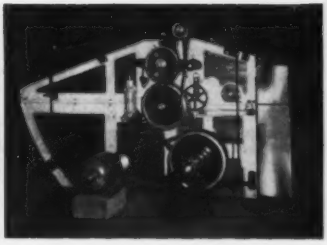
HUNTER *equipment safeguards quality at* BOTANY MILLS

Botany Mills safeguards its reputation as a leading maker of quality woolen and worsted fabrics by maintaining constant, efficient production through the use of modern, dependable equipment.

In mills throughout the world Hunter "plus production" equipment gives daily proof of superior performance in the finishing of a wide variety of ***cottons, woolens, blends*** and ***synthetics.***

There are three (3) Hunter Continuous Range Cloth Carbonizing units in operation at Botany Mills yielding a steady, high rate of top quality production. This modern unit consists of a wetting-out tank, acid-soaking tank (wood or stainless steel), heavy duty pneumatic squeeze rolls, dryer and carbonizer. Send for BULLETIN CC.

Botany Mills installed their first Hunter Fulling Mill in 1892 . . . now have nine (9) in operation . . . and four (4) more on order. In mills where from 6 to 12 (or more) pieces per set are normal, it is possible to keep these complete sets in one Hunter Model 26 Fulling Mill where they are subjected to the same treatment. For full details on high production at low cost send for BULLETIN FM.



plus production

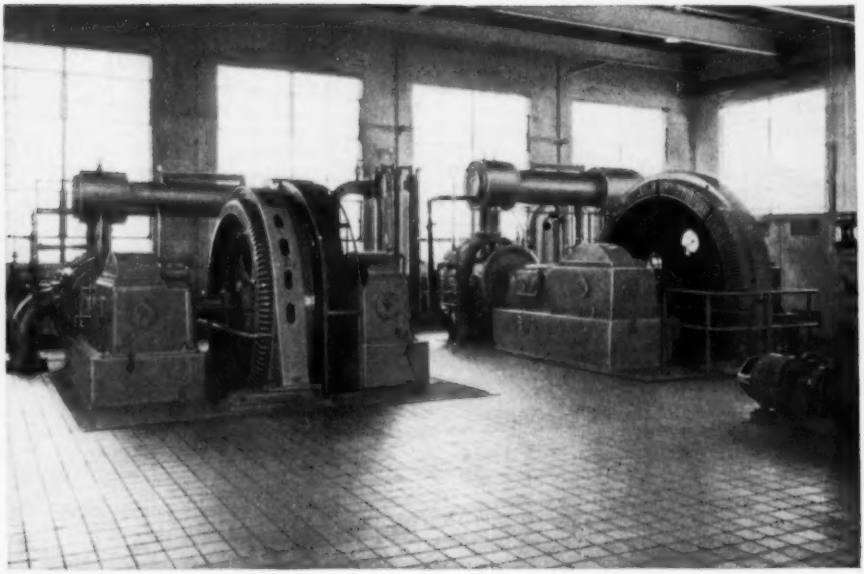
- efficient operation of modern equipment
- less down time of equipment
- quick, easy repair . . . rapid parts delivery

JAMES HUNTER MACHINE COMPANY

NORTH ADAMS, MASSACHUSETTS FOUNDED 1847

BUILT BY HUNTER . . . IT'S DEPENDABLE

JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS, MASS.



with O-CE COMPRESSORS, built for continuous, heavy-duty operation — in sizes up to 2,000 hp., for pressures to 5,000 lbs.

Of horizontal, double-acting, water-cooled type, with direct-mounted synchronous motor drive, these compressors are unsurpassed for dependable, low-cost performance.

meet AIR DEMANDS economically

- ✓ Equipped with roller bearings throughout.
- ✓ Quick-acting Simplate valves minimize power consumption.
- ✓ Large, stream-lined air passages make air flow resistance negligible.
- ✓ CP Multi-Step Control handles partial load demands economically.
- ✓ CP Automatic Starting Unloader completely unloads compressor when starting and stopping, and permits automatic restarting after power failure.
- ✓ CP Intercooler assures maximum heat transfer with low water consumption.

Write for full information.

CP Fiftieth ANNIVERSARY

CP CHICAGO PNEUMATIC TOOL COMPANY

General Offices: 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

Get rid of this "Saboteur of Profits"

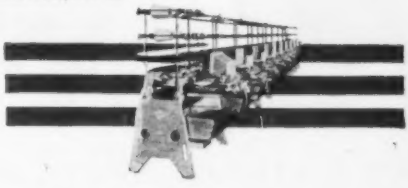
A builder wheel is basically unsound when winding filament yarns, because it determines the lay of the yarn on the bobbin by contact with the yarn and can cause broken filaments. A builder wheel is a "saboteur of profits" It can be responsible for excessive loom stoppage and fabric seconds.

The Foster-Muschamp Autofill, a fully automatic machine for winding filament yarns on filling bobbins, does not use a builder wheel. It uses a set of gears (which do not contact the yarn) to lay the yarn on the bobbins in a predetermined and precise arrangement. Thus all bobbins are uniform and deliver in a uniform manner from the shuttles. Broken filaments, tight picks, broken ends and fabric seconds are greatly reduced.

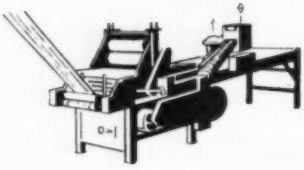
If you have "saboteurs of profits" in your winding room, find out more about the Foster-Muschamp Autofill Winder. Send for Bulletin M-1 (no obligations).

FOSTER MACHINE COMPANY
WESTFIELD, MASS.
Southern Office, Johnston Bldg., Charlotte, N. C.

FOSTER - MUSCHAMP AUTOFILL WINDER



Now, ONE MACHINE changes synthetic tow to crimped sliver

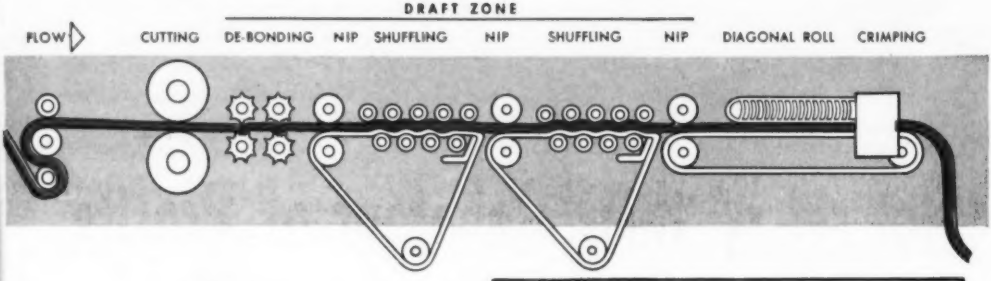


● Now, in one efficient operation, the Converter changes synthetic tow into cut staple ready for the drawing operations.

Fibers enter the Converter as continuous tow, where they are cut to the desired lengths, either uniform or varied, up to six inches maximum. They emerge as drawn crimped sliver, ready for further integrating and reducing operations.

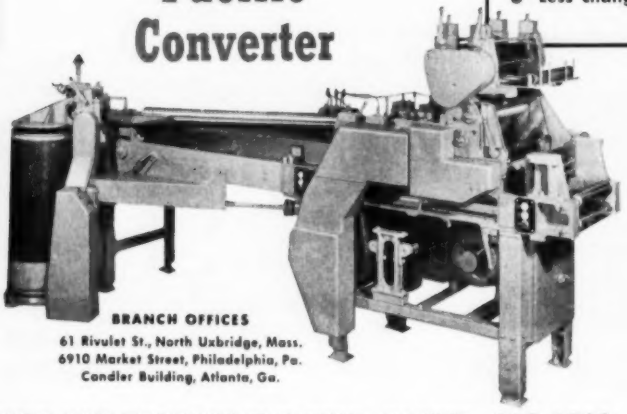
As a result, the Converter is a real cost-saver. It eliminates entirely such operations as opening, mixing, carding, gilling, and combing. And the original cost of the machine is only a fraction of the cost of the machines it replaces. There is a big saving in floor space. And one operator can handle two or more Converters.

Our Field Engineer in your territory will give you complete information. Or write today for our new Converter Bulletin.



The Warner & Swasey-Pacific Converter

- Eliminates opening, mixing, carding, and combing operations of cut staple
- Cuts continuous tow to desired lengths
- Exact percentages of blends
- Cuts costs on machines, labor, maintenance
- Less change-over time



BRANCH OFFICES
61 Rivulet St., North Uxbridge, Mass.
6910 Market Street, Philadelphia, Pa.
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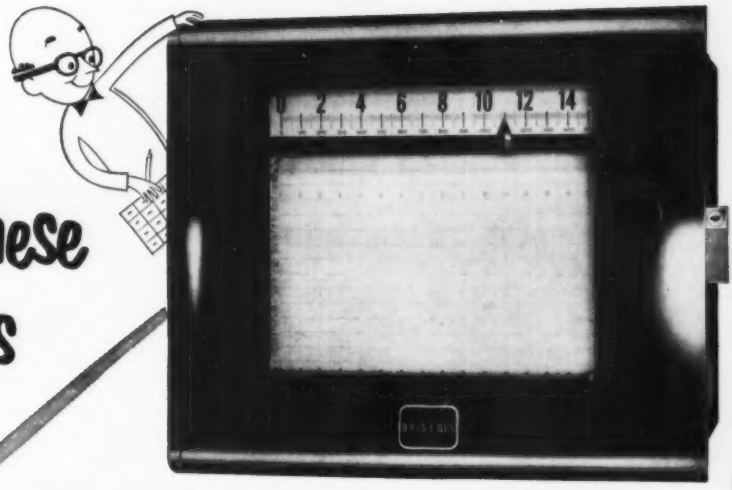
WARNER & SWASEY
TEXTILE MACHINERY DIVISION

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS...WITH A WARNER & SWASEY



Check these features

OF THE

BRISTOL DYNAMASTER FOR TEMPERATURE pH and SPEED

—the electronic master-mind for your measuring, recording and controlling problems

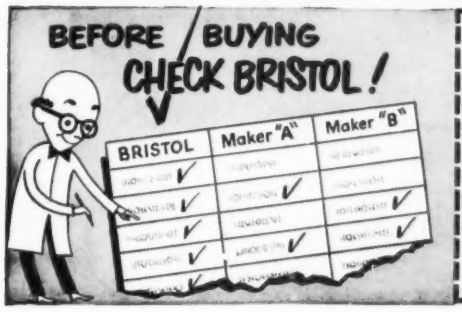
- ✓ Continuous-balancing electronic circuit responds instantly to minute changes
- ✓ All types of electric and air-operated controllers offered
- ✓ Available as a self-balancing bridge or potentiometer
- ✓ Trouble-free operation
- ✓ Electronic component uses vacuum tubes available at any radio supply house
- ✓ Full-scale pen travel in 7, 3 or ⅔ seconds
- ✓ Chart speeds from ¾ in. per hour to 7200 in. per hour
- ✓ Multiple recorders up to 16 points
- ✓ Components interchangeable and easily replaced on all Dynamaster models
- ✓ Immune to most vibration or shock
- ✓ Exceptionally unaffected by stray currents (1000 to 1 discrimination).

BRISTOL

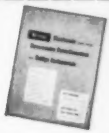
FOR DETAILED PROOF *of the sensitivity, versatility and reliability of the electronic Dynamaster, use the coupon or write for Catalog P1245.*

The dependable Guidepost of Industry

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS



THE BRISTOL COMPANY
103 Bristol Road
Waterbury 20, Conn.



Please send catalog giving details of Dynamaster performance to:

NAME _____ TITLE _____

COMPANY _____

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6 reasons why

It's the Experience that Counts . . .

RELIANCE V★S
is the result of nearly 50 years' experience in the engineering and application of Adjustable-speed Drives.

Write today for important *NEW* data on Reliance V★S Drive (3/4 to 300 hp.) and how it can give you greater flexibility of operation to increase production and lower costs. Ask for V★S Drive Bulletin D-2311.

RELIANCE V★S
is important to you

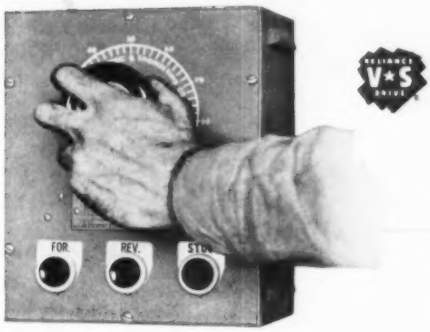
quick starting — without use of clutches; smooth action protects fragile materials.

quick, smooth stopping of any load through positive electrical braking which never wears out or needs adjustment.

controlled acceleration and deceleration—your operator can increase or decrease speed at any desired rate; provides for best machine performance.

unlimited speed changes over a wide range permit selection of the right speed for machine, material and operator to secure maximum production.

inching, jogging or creeping through adjustable slow speeds; your operator can slow down a machine for inspection, then accelerate quickly and *exactly* to previous working speed.



convenient-to-operate controls grouped and located where your operator can quickly, easily and safely control all functions of his machine. Operator fatigue is reduced—there is less production lag over the course of a shift—scrap losses are held to a minimum.

Sales Offices in Principal Cities

RELIANCE ELECTRIC AND ENGINEERING CO.

1086 Ivanhoe Road, Cleveland 10, Ohio • Canadian Division: Welland, Ontario

L. F. Dommerich & Co., Inc.

Executive and General Offices

271 MADISON AVENUE

NEW YORK 16, N. Y.

Telephone: Murray Hill 3-8650

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For Manufacturers and Merchants

Inquiries as to our services solicited

●

BUSINESS ESTABLISHED 1840

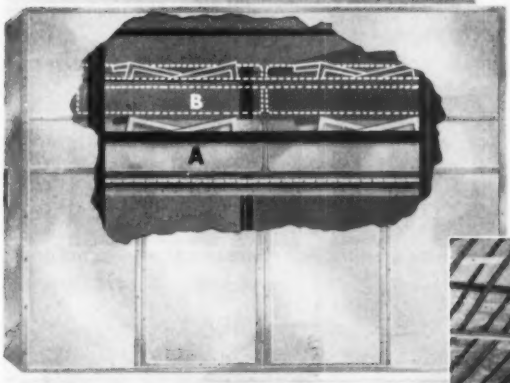
Superior Quality at lower cost

with McCreary Electro-Setting†

The modern electronic method of setting nylon and other synthetic tricots and woven fabrics.

Check and compare these 10 big features:

- cuts costs and number of finishing operations in half.
- sets dyed goods without streaks — uniform color.
- no stop spoilage.
- temperature range to 1500.
- produces relaxed, wrinkle proof, fully set cloth.
- uniform heat across tenter frame — no edge waste.
- stepless, uniform heat provided by G-E calrods* controlled by G-E reactrol.*
- flexible — will set either wide or narrow cloth.
- used extensively in curing process for resin treated fabrics.
- average operating cost only 50c to $1.00 per hour.



A) Cut-a-way view of radiant reflector units in operating position above tenter frame.

B) Position automatically assumed by radiant reflector units when motion of cloth on tenter stops.

Close up of radiant reflector unit showing calrods and thermocouple assembly.*

†Electro-setting is an integral part of the McCreary continuous process of automatic pinning and overfeed, tenter frame, dryer, and electro-setter. It can, however, be obtained separately and for installation on existing tenter frames.

Send for FREE illustrated brochure on McCreary continuous process.

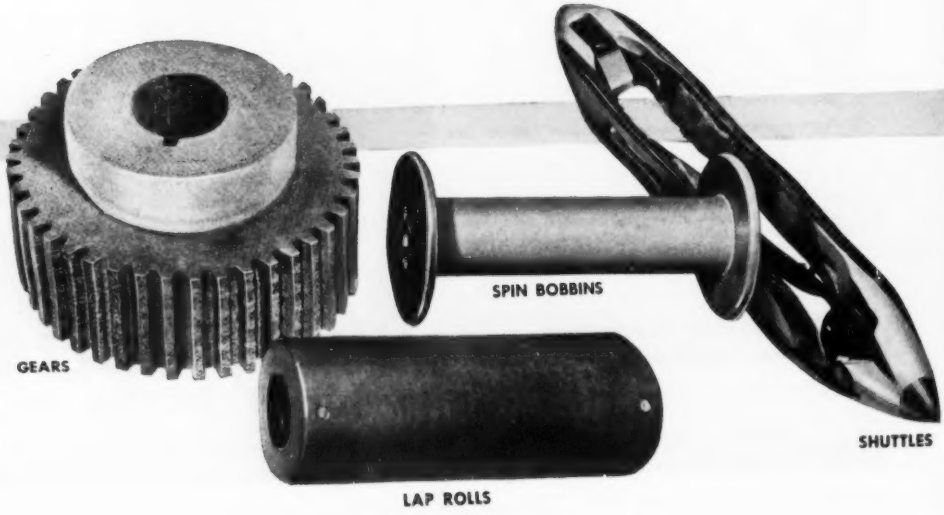
completely equipped with G-E heaters and controls

*Reg. US Pat. Off. †Patents applied for

McCreary
MACHINE WORKS, INC.
COHOES, NEW YORK

MANUFACTURERS OF TEXTILE FINISHING MACHINES SINCE 1874

here's why... MORE and MORE mills are turning to micarta®...



because of these qualities . . .

Saves Weight, weighs half as much as aluminum.
Resists Compression, pound for pound greater than steel.
Resists Impact, absorbs and withstands severe shock.
Withstands Vibration, cushions repeated shock without effect.
Insulates like mica but greater flexibility.
Resists Corrosion, not affected by acids, oils, fumes.
Resists Heat and Cold from −112° F to 212° F.
Resists Moisture, in fact, water is its best lubricant.
Wears Slowly, Evenly, in many cases more slowly than metal.
Reduces Noise, absorbs vibrations, deadens noise.
Fabricates Easily, machined or punched with ordinary tools.

because of these flexibilities . . .

Laminated MICARTA includes standard structural shapes: plates, sheets, angles, channels, rods, tubes and zees. Occasionally this class includes simple molded shapes.

Molded MICARTA is the choice for complicated shapes, large production quantities of either simple or complicated shapes, or for certain properties better obtainable in form molding.

because micarta is basic

MICARTA is a tough and resilient basic material that welcomes comparison with other basic materials. This versatile plastic outlasts wood and metal in many punishing applications. Investigate MICARTA and you'll find it the economical solution to tough production problems.

YOU CAN BE SURE... IF IT'S
Westinghouse
micarta

for more information on how MICARTA can help solve your production problems, and give you advantages no metal can give you, please fill out the coupon below. A MICARTA representative will then call on you personally.

mail it today!

Westinghouse Electric Corporation
MICARTA Division, Trafford, Pa.
Attention: L. A. Pedley

Sir: (Please Check One)

☐ Please have your representative call
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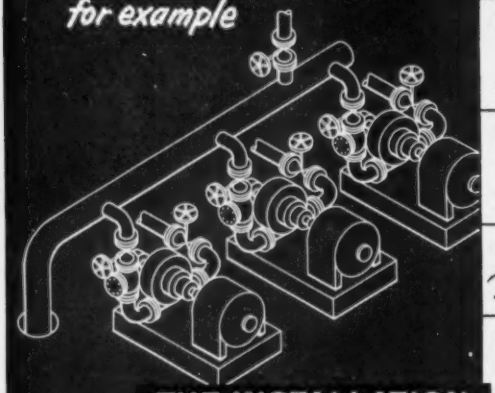
Name_____ Company_____
Address_____
City_____ Zone_____ State_____

J-06501-A

Can You Trust Your Checks to Hold Like This?

. . . on Water Pumps, for example



THE INSTALLATION

Crane Iron Body Swing Check Valves in 8-inch vertical lines on discharge side of water pumps supplying a large eastern paper mill.

VALVE SERVICE RATINGS

SUITABILITY:	Working smoothly - no complaints
FEATURES:	O.K. for either horizontal or upward flow
MAINTENANCE COST:	None - no maintenance needed to date
SERVICE LIFE:	Now better than other checks used
OPERATING RESULTS:	No water or head loss
PRICE:	In line with other makes
AVAILABILITY:	Stock item - Crane product

THE HISTORY

The mill depends on these pumps for all water. Loss of head at the pumps would create a serious problem. The mill could take no such risks. Regularly, the check valves on pumps were replaced, but only to be found leaking between pumping cycles, a few months later.

It's now more than a year since the change-over was made to Crane Check Valves. There's been no loss of water, no maintenance or replacement of any checks on the pumps. That was proof enough for the mill, that Crane Quality means better valves —greater dependability and bigger value. As a result, 3 more of these checks were installed on a separate battery of suction pumps.

THE VALVE

Crane No. 373, 125-Pound Iron Body Swing Check Valves, brass trimmed. The long life and high seating efficiency of these checks, in 2 to 8-in. sizes, is in large part due to the Crane patented flexible disc-hinge design. Double spring mounting eliminates lost motion between parts, yet permits true, full contact of disc and seat at every closure. Also serves to absorb the shock of seating under back-flow pressure. See your Crane Catalog or Crane Representative for full details.

The Complete Crane Line Meets All Valve Needs. That's Why

More Crane Valves Are Used Than Any Other Make!

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois

Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

City_____ Zone____ State_____

J-06501-A

Photographs taken in 1/20,000 second on a Draper X2 Loom at 175 picks per minute. G&K Endless Check Straps are made of selected Hairitan leather (hair-on or hair-off) folded double and cemented. They have low permanent stretch and amazing tensile strength. Available for Draper Looms in 15 sizes from 7" to 10½" gauge.

Split-second follow thru

CUT SHUTTLE COST
(No hot spurs)
STOP KINKY FILLING
(No shuttle-bounce)
REDUCE BANG-OFF
(Perfect boxing)
INCREASE PROFITS

CATALOG presents the complete line of Textile Leathers for weaving — also aprons and tapes for the woolen and worsted industry. Ask for a copy on your letterhead.

G&K Hairitan® Leather Endless Check Strap cushions the stick—prevents shuttle bounce

Notice how the G&K Hairitan Endless Check Strap – gliding through *two* sets of fingers beneath the box – rides with the picker stick to the end of the lay. This is smooth, positive *follow-thru* checking action. The strap conforms to the angle of the stick and holds it straight and true. The stick comes to rest gently and evenly, *without bouncing the shuttle.*

Follow thru with Orange Line Loom Leathers. More than 50 various loom leathers are available to help loom tenders get more yardage with less waste and down-time.

second century G and K Orange® Line Textile Leathers

GRATON & KNIGHT COMPANY, Worcester 4, Mass. DIXIE LEATHER CORPORATION, Affiliate, Albany, Ga.

For more information, write direct or use Reader Service post card.

HIGH QUALITY of Pittsburgh Phthalic Anhydride, important dye intermediate, is rigidly maintained in phthalic plant control room.

DYESTUFF QUALITY CONTROLLED FROM COAL-TO-COLOR

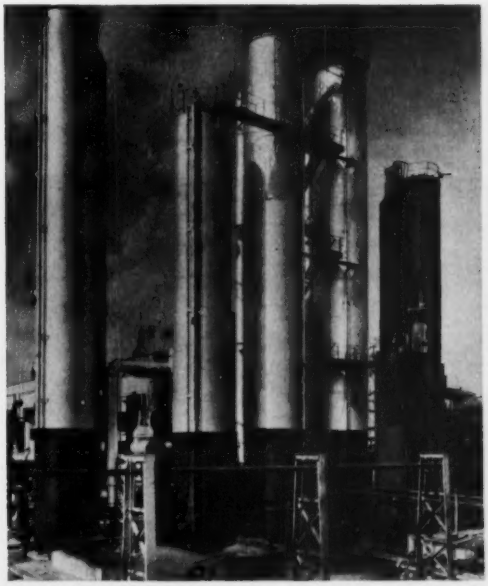
at integrated Pittsburgh chemical plant

1 **SOURCE** of basic coal chemicals for Pittsburgh Dyes is this battery of 140 coke ovens. Fed from large coal stockpiles in foreground, they operate around clock.

A unique, basic production position now enables complete, coal-to-color control of quality in the manufacture of vat dyes at the Neville Island plant of the Pittsburgh Coke & Chemical Co., Pittsburgh, Pa.

The Pittsburgh company, which has produced dye intermediates and other basic coal chemicals for many years, formed its Fine Chemicals Division early last year. The division's first production section, a modern dyestuff plant, is now beginning operations as an integrated unit of the company's plant.

The complete and exacting production control of Pittsburgh Dyestuffs, from the selection of coal to the packaging of the finished colors, enables Pittsburgh to offer its customers two important advantages: (1) Assurance of exceptionally high standards of quality and purity and (2), prompt deliveries and continuing supplies, regardless of varying marketing conditions affecting raw material supplies.



2 **DYE-MAKING** chemicals like benzene, toluene, phenol and pyridine are recovered from oven gases in modern processing equipment like these benzol scrubbers.

3 **LABORATORY** of new dyestuff plant is large and well equipped. It guides production techniques in plant and conducts continuing dyestuff research program.

4 **1500-GALLON** mixing kettles are made of stainless steel—one more step to assure maximum protection of the quality and purity of all Pittsburgh Dyestuffs.

5 **APPLICATIONS LABORATORY** is key unit in Pittsburgh quality control. Here finished dyes are tested for color, quality, fastness to light, laundering and wear, and many other important dyestuff properties.

6 **COMPLETE** production control from coal to colors assures ample stocks of Pittsburgh Dyestuffs and prompt shipments to the nation's textile industry.

WBD 4847

PITTSBURGH
COKE & CHEMICAL CO.

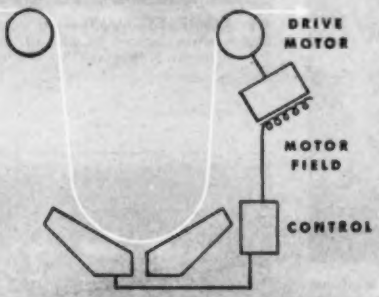
COAL CHEMICALS • AGRICULTURAL CHEMICALS • PROTECTIVE COATINGS • PLASTICIZERS • ACTIVATED CARBON • COKE • CEMENT • PIG IRON

stockpiles in foreground, they operate around clock.

affecting raw material supplies.

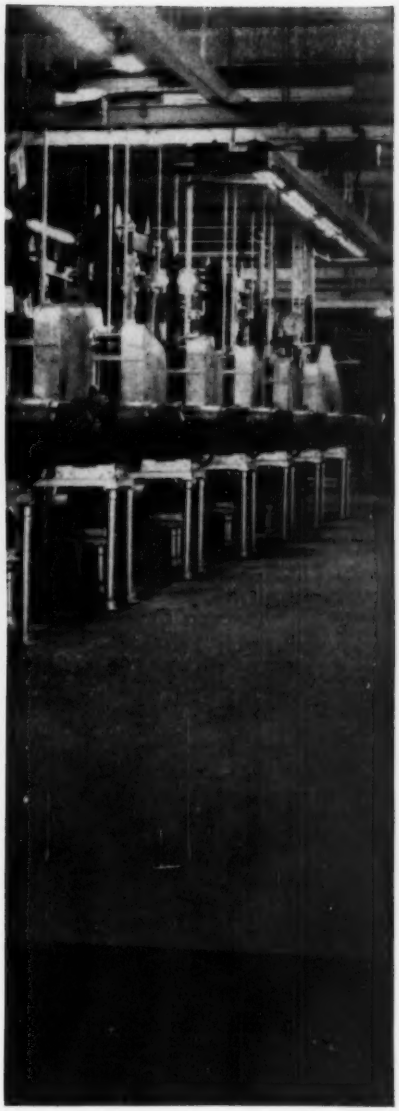
They did what you can do to produce more

THIS NEW TENSIONLESS CONTROL DEVICE MAINTAINS SYNCHRONIZED OPERATION AT HIGH SPEED



As the cloth moves from one section to the next, a metal plate is so located that the cloth can touch it. When the wet cloth touches the plate, one speed relationship between the two sections is obtained. When the cloth is not touching the plate another speed relationship holds. Thus, the loop of cloth moves up and down a fraction of an inch several times a second, effecting a change in speed ratios. This maintains synchronism, without tension, between the finishing range sections.

Here's how this finishing range drive reduces costs and increases production



The drive for this new Riggs and Lombard "LAXLOOP" continuous washer, installed in the Bachmann Uxbridge Mill, offers many important operating advantages. Simplified controls and automatic tensionless synchronization afford greater ease of operation, economy of water and reduced labor costs.

The whole range can be controlled from one spot

Two controls, one for tensionless synchronizing and one for the drive motors, make it possible to control the whole range or each tub individually from one location. The individual drive-motor controls allow the operator control over each tub, or any combination of tubs, for setup and adjustments. The tensionless synchronous control allows 15 to 20 hours continuous operation without rethreading. Formerly, rethreading was necessary every three to four hours.

Automatic controls save water and prevent tie-ups

The control scheme also automatically shuts off the water supply every time the machine is stopped. With this system, the mill uses an average of less than three gallons of water per pound of material processed. This saving in water, with the resultant saving in steam, is of tremendous value to the mill. In addition, electric knockoff devices automatically stop the washer in case of a tangle or tie-up. An indicating light on the control panel even shows the operator which tub to go to if a tie-up occurs.

Call Westinghouse early on every job

If you are planning new equipment, a new mill, or plant modernization, be sure to call in Westinghouse early on every job. You'll get application help and the right equipment to do the job *best.*

HERE'S AN IMPORTANT FREE BOOK

This 32-page book gives you additional information about Westinghouse finishing machine drives. There are sections on tension control, cost factors, speed ranges, operating economies, maintenance features, and other vital points. Write for Booklet B-4034, "Westinghouse Equipment for Textile Finishing." Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-94917

Westinghouse

EQUIPMENT FOR THE TEXTILE INDUSTRY

WESTINGHOUSE

"Tycol Armitage boosts bearing life... smooths the way for faster, heavier loads"

Of course! Tycol Armitage Bearing Grease "stays put" ... keeps anti-friction bearings running smooth and cool. Its high stability makes it suitable for sealed anti-friction bearings that must last the life of the equipment.

Tycol Armitage possesses exceptional resistance to oxidation.

The dependable lubricating ability of this quality grease lengthens bearing life and cuts down maintenance costs.

Call your nearest Tide Water Associated office for further information.

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TIDE WATER ASSOCIATED OIL COMPANY

17 BATTERY PLACE - NEW YORK 4, N. Y.

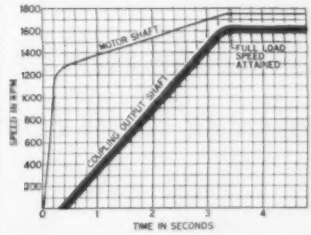
SEND FOR A FREE COPY OF "TIDE WATER ASSOCIATED LUBRICANIA"

HERE'S PROOF...

that LINK-BELT's Fluid Drive with constant CUSHION ACTION cuts machinery wear and tear

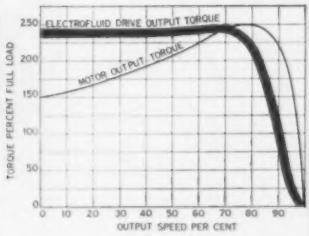
Cutaway shows simple, rugged construction of Link-Belt Fluid Drive.

Smooth acceleration - -



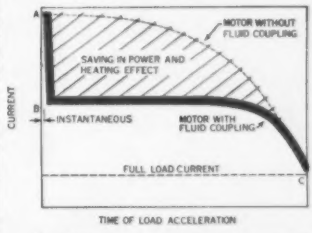
Typical motor and coupling acceleration curves for a high-inertia load show how CUSHION ACTION smoothly and gradually accelerates the load, saving wear and tear on vital equipment.

No overpowering - -



Compare the output torque of a motor with and without the fluid coupling. Because motor accelerates free of load, it reaches maximum pull-out torque that might otherwise require a special type of oversize motor.

Low starting current - -



As these current consumption curves show, with the fluid coupling, motor starting current drops instantaneously to less than half the starting current required by a motor without fluid coupling. Difference represents power savings, reduced heating.

Now you can use smaller motors and power transmission equipment on your toughest drive problems. What's more, both motors and driven machines will last longer with Link-Belt Fluid Drives.

That's because constant CUSHION ACTION provides shock and overload protection . . . and at the same time eliminates high starting torque requirements and high starting currents.

Look at the three sets of curves shown here. See for yourself how constant CUSHION ACTION is the money-saving answer for loads of the high inertia, repetitive shock or high starting torque type.

For complete information, write for Book 2485. It shows how you can put five types of Link-Belt Fluid Drives to work in your plant: Electrofluid Drive, Electrofluid Gearmotor, Fluid Drive, Fluid Gear Drive and Fluid Coupling Drive. 12,018

LINK-BELT
FLUID DRIVES

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices, Factory Branch Stores and Distributors in Principal Cities.

For more information, write direct or use Reader Service post card.

PLANNED INTERFERENCE

BLOCKS HIGH COSTS!

With Baldwin-Rex Roller Chains on your drives, you won't be troubled with high maintenance and repair costs . . . production losses . . . due to premature chain failure. *Planned interference* protects you! Here's why:

1 The press fit of pins and bushings in roller chain side plates materially determines length of chain life. Correct press fits prevent pins and bushings from turning in their side plates so that when chain flexes, a relatively broad surface of pin and bushing takes the wear. If a pin or bushing were to break loose and turn in the side plate, with each flexing of the links, wear would be concentrated on a small pin or bushing surface at the plate and materially shorten the life of the chain.

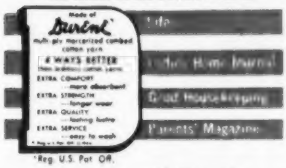
2 In Baldwin-Rex Chains, pins, bushings and side plates are built with *planned interference.* In other words, pins and bushings are actually designed to be a specified amount larger than the holes into which they are to fit. This assures a controlled press fit and prevents rotation of pin and bushings in side plates. It means longer, lower cost chain life to you!

Ask your Baldwin-Rex Field Sales Engineer to demonstrate *planned interference* with his sample kit. It's graphic proof of long life. Or, for details, write Baldwin-Duckworth Division of Chain Belt Company, 346 Plainfield Street, Springfield 2, Mass.

BALDWIN-REX ROLLER CHAINS

BALDWIN-DUCKWORTH
DIVISION OF CHAIN BELT COMPANY
a complete line from ¼ to 2½-inch pitch

*You collect on the Durene® ads in



*Reg. U.S. Pat. Off.

reaching over 47,000,000 readers.

STANDARD Durene®

pares your knitting and weaving costs

With quality-controlled Standard Durene, you'll produce more "firsts" and, in the market place, you'll find your garments sell faster. The reason — Standard Durene garments' longer wear, better looks, greater comfort and washability, plus their ever-widening consumer acceptance.* Ask our representative to show you how Standard Durene performs production-wise and sales-wise.

Over Sixty Years of Service to the Textile Industry

Standard-Coosa-Thatcher Co.

CHATTANOOGA 1, TENN.

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185 Madison Ave.

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Philadelphia 22, Pa.
1427 N. Broad St.

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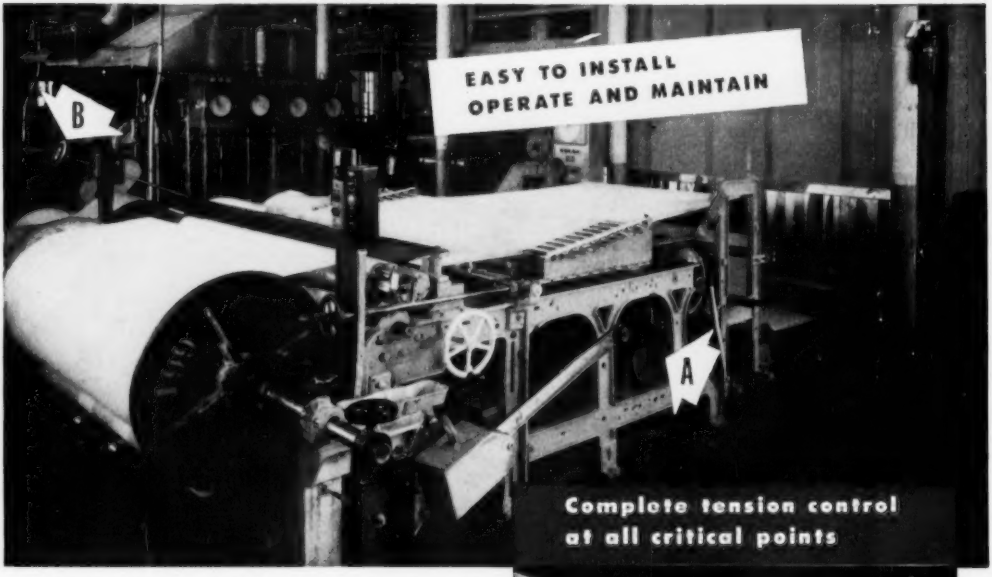
Representatives in Canada, Central & South American Countries

STANDARD DURENE
S-C-T Industrial Sewing Threads
Natural, bleached, dyed

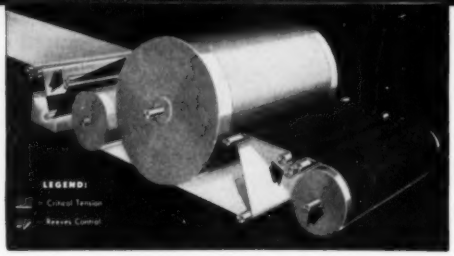
 For more information, write direct or use Reader Service post card.

Build Better Beams with...

REEVES "Servo-Control" Slasher Drive



Arrow "A": The Complete Slasher Drive "nests" neatly beneath slasher head-end frame. *Arrow "B":* Handwheel—for setting Beam drive to maintain desired yard tension.



Add up all these quality-improving, money-saving advantages of REEVES "Servo-Control" Slasher Drive:

1 Finger-tip control from creep to run speeds by push button.

2 Smooth acceleration and deceleration through 15:1 speed range.

3 Quick, accurate, positive control of running speeds—without fluctuation—either manually or automatically tied in with moisture control.

4 Automatic, uniform tension regulation as beam builds.

5 Low initial cost; easily maintained by your mill mechanics; no complicated electrical hook-ups.

6 "Nests" under slasher head-end frame.

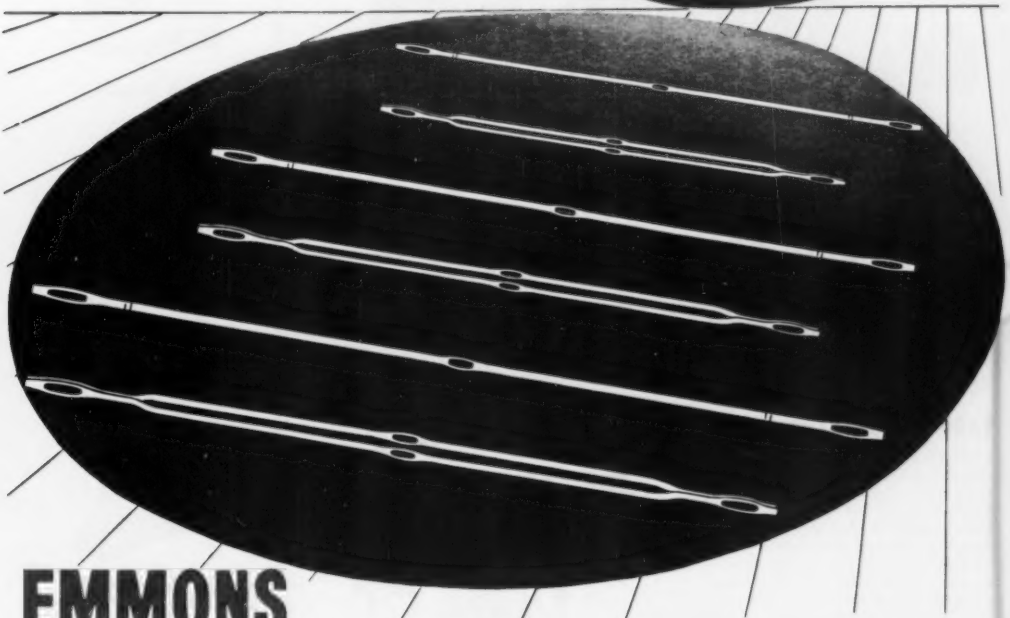
It will pay you to get the complete story right away. Send for bulletin No. W63d-S.

accurate · variable
REEVES *Speed Control*

REEVES PULLEY COMPANY • COLUMBUS, INDIANA
Recognized leader in the specialized field of speed control engineering

e Reader Service post card.

ESTABLISHED IN **1867**



EMMONS

WEAVE ROOM EQUIPMENT

For 85 Years, The Name in Loom Harness!

Generations of Emmons "E" Men have learned and passed along the accumulated know-how that sustains our reputation. When you call in your "E" Man — stationed nearby, wherever your mill may be — you know his advice on installations is backed by the authority of experience.

His job is to help you. Take advantage of his training — and rely on him to supply you with Emmons heddles, heddle frames, reeds, slasher and striking combs, Run-Rite Plastic Sheaves (distributed by EMMONS in New England & Canada; manufactured by National Plastics, Inc.), and the rest of our complete line of weave room equipment.

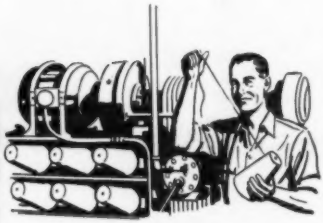
You'll find EMMONS "E" MEN at

NEW JERSEY	LOS ANGELES, CAL.	GREENSBORO, N. C.
HENDRIK VAN BREDERODE 311 Goodwin Ave., Midland Park Phone Ridgewood 6-0760	E. G. PAULES 1762 West Vernon Ave. Phone AX 3-6265	R. F. COE Box 221
CHICAGO, ILL.	CHARLOTTE, N. C.	GREENVILLE, S. C.
ALBERT R. BREEN 80 E. Jackson Blvd. Phone Harrison 7140	BRANCH PLANT George Field, Mgr. P. O. Box 2036, Phone 3-7503	RALPH GOSSETT & COMPANY 8 South Church St. Phone 3-6233
CANADA	ATLANTA, GA.	SAN ANTONIO, TEX.
IAN M. HALDANE CO. P. O. Box 54 London, Ontario	ARTHUR HARRIS P. O. Box 1982 Phone Main 2643	W. H. GIBSON 1743 McKinley Ave. Phone L2-9451

Main Office and Plant
EMMONS LOOM HARNESS CO., Lawrence, Mass.

American Blower...a time-honored name in air handling

New York City has a conveniently located American Blower Branch Office to provide you with data and equipment for air handling. You can reach American Blower in New York by calling BRyant 9-2885. In other cities, consult your phone book.

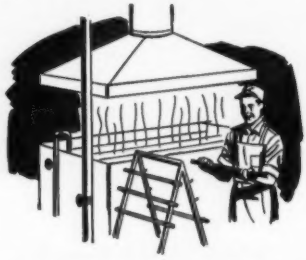


YARN ABOUT YARN . . .

A textile manufacturer was continually changing pulleys or setting the machine rate on his ring-spinning frames to fit the material that worked at the lowest speed. He'd heard about American Blower Gyrol Fluid Drives and decided to try them. Results were amazing. Gyrol Fluid Drive permitted a higher output within safe limits of the material, allowed spinning frames to start gradually with less yarn breakage. For your business, wouldn't smooth power transmission and adjustable speed control be a distinct advantage?

FOOD FOR THOUGHT . . .

Those magnificent new supermarkets springing up around the country are just as comfortable as they are modern. Many use American Blower Ventura Fans for ventilation the year round, and Venturafin Unit Heaters for winter heating. They meet a twofold requirement. First, both units are beautifully styled to harmonize with modern designs. Second, both units are quiet-operating—a necessity in modern stores. Our nearest branch office will be glad to furnish price and delivery data.



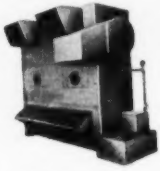
FUMES, VAPORS, GASES . . .

In addition to a wide range of standard ventilating equipment for industry, American Blower also offers special fans to handle corrosive gases, fumes, vapors. Some corrosive gases are vital to process work and must be circulated in the system with corrosion-resistant fans. Gases and fumes which affect the health and comfort of employees must be removed. There is an American Blower corrosion-resistant fan that will meet your requirements for those special applications in the process industry.

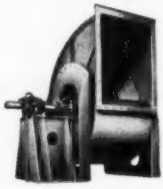
Whatever your needs, American Blower heating, cooling, drying, air conditioning and air handling equipment will improve over-all comfort and efficiency in your business. For data, phone or write our nearest branch office.

Unit Heaters

Ventura Fans



Air Conditioning Equipment



Industrial Fans

Utility Sets

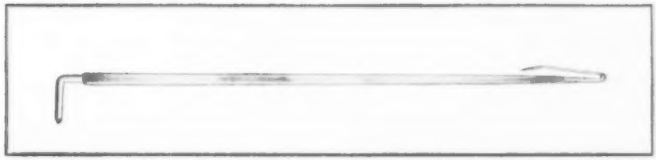
AMERICAN BLOWER CORPORATION, DETROIT 32, MICHIGAN
CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO

Division of American Radiator & Standard Sanitary Corporation

YOUR BEST BUY **AMERICAN BLOWER** **AIR HANDLING EQUIPMENT**

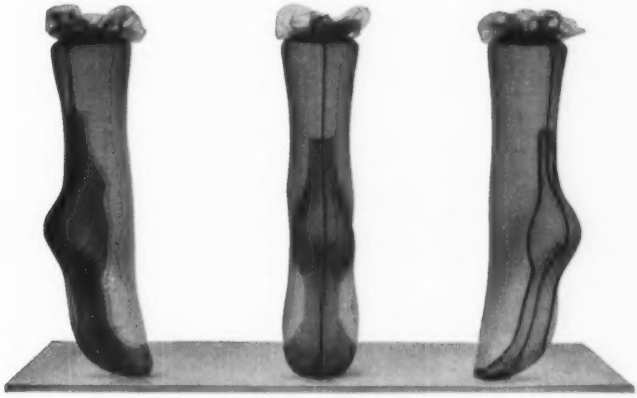
Serving home and industry: AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

the better the temper



the longer the service

. . . the finer the product



And we might add . . . *the lower the cost!*

For quality needles contribute directly to lower costs in several important ways: rejects and second-run merchandise are sharply reduced; down time for adjustment and needle replacement is cut; production proceeds with less interruption. That's why leading mills prefer TORRINGTON NEEDLES.

THE TORRINGTON COMPANY, Torrington, Conn., U. S. A.
Established 1866

Branches: New York • Philadelphia • Chicago • Greensboro, N. C. • Boston
St. Louis • Bedford, P. Q. — Toronto, Canada. • *Pacific Coast Representative:* E. G. Paulus, 1762 West Vernon Ave., Los Angeles 37, Calif.
Broadgate House, 7-10 Eldon St., London E. C. 2, England.

TORRINGTON

SPRING BEARD NEEDLES • SINKERS • DIVIDERS • SPLIT DIVIDERS

when high speed's a must...

Torrington Needle Bearings are used in many high speed applications and operate smoothly and efficiently at 5,000 . . . 10,000 . . . even 15,000 rpm.

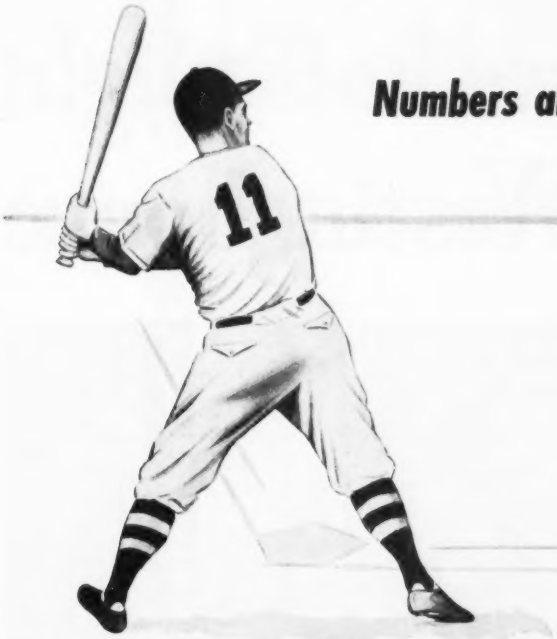
Careful design and precision workmanship give Needle Bearings a low coefficient of friction. And the full complement of small diameter rollers constantly maintains a thin film of lubricant on all bearing contact surfaces. Result: smooth performance, high radial load capacity and long service life at continuous or intermittent high speeds.

So if high speed is a "must" in your product, ask a Torrington engineer to help you get it, along with other Needle Bearing advantages such as compact size, light weight and ease of assembly.

THE TORRINGTON COMPANY
Torrington, Conn. South Bend 21, Ind.
District Offices and Distributors in Principal Cities of United States and Canada

TORRINGTON *NEEDLE* **BEARINGS**

Needle • Spherical Roller • Tapered Roller • Straight Roller • Ball • Needle Rollers



Numbers aren't always dependable

but Ashworth's 4-6-7 Is...

4 FACTORIES (Fall River, Worcester, Philadelphia, Greenville) assure you of an uninterrupted supply of card clothing. Decentralized and strategically located, these factories can "pinch hit" for each other in emergencies.

6 REPAIR SHOPS (Fall River, Philadelphia, Charlotte, Greenville, Atlanta, Dallas (Textile Supply Co.)) assure convenient, economical and prompt reclothing and repair service.

7 DISTRIBUTING POINTS (Fall River, Worcester, Philadelphia, Charlotte, Greenville, Atlanta, Dallas (Textile Supply Co.)) make Ashworth products and consultation service more readily available.

AND DON'T FORGET "90". More than 90 years of experience in cards and card clothing — your guide to a consistently high standard of quality in manufacture and efficiency in performance.

Buy Ashworth Card Clothing and get DEPENDABILITY.

ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

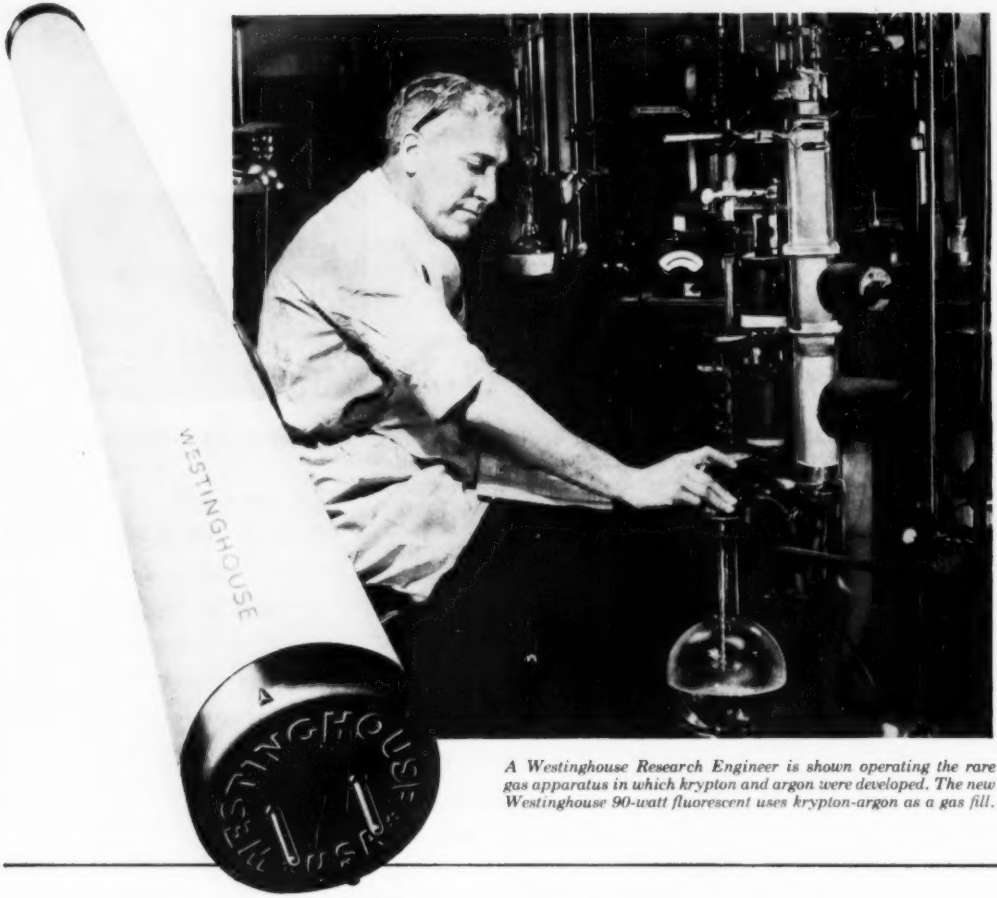
FALL RIVER • WORCESTER • PHILADELPHIA • CHARLOTTE • GREENVILLE
ATLANTA • DALLAS (Textile Supply Co.)

PRODUCTS AND SERVICES

. . . Card Clothing for cotton, wool, worsted, silk, rayon and asbestos cards and for all types of napping machinery. Brusher clothing and card clothing for special purposes. Lickerin wire and garnet wire. Sole distributors for Platt's metallic wire. Lickerins and top flats reclothed.

Ashworth CARD CLOTHING

Rare gases boost light of new Westinghouse



A Westinghouse Research Engineer is shown operating the rare gas apparatus in which krypton and argon were developed. The new Westinghouse 90-watt fluorescent uses krypton-argon as a gas fill.

YOU CAN BE **SURE**...IF IT'S

Westinghouse

For more information, write direct or use Reader Service post card.

and efficiency 90 watt lamp

The light and efficiency booster in the new Westinghouse 90-watt fluorescent lamp is krypton-argon. This gas fill, exclusive with Westinghouse, takes only 2% more current to jump light output 6%. And after 7500 hours, this new lamp will still outshine every other lamp in its class.

The new 90-watt will fit your present 85-watt or 100-watt fixtures. It will hold the level of light above your minimum foot candle value longer. It'll reduce your yearly cost of light.

It has many other advantages. For one thing, with the new 90-watt, the ballasts run cooler because of lower wattage loss. But why not write us for more information. Just mail the coupon, or call your nearest Westinghouse Lamp Sales Office.

WESTINGHOUSE LAMP DIVISION, BLOOMFIELD, NEW JERSEY

TUNE IN ON HISTORY! Only Westinghouse brings you complete coverage of four-month political campaign over CBS television and radio.

NEWS FROM WESTINGHOUSE, THE FASTEST-GROWING LAMP MANUFACTURER

by Sam Hibben

STILL ROOM FOR ADVANCEMENT: Science has made vast strides in lighting efficiency, (measured by lumen output per watt of power input). Lamps today are up to 15 times more efficient than the old carbon filament incandescent lamp, with fluorescent lamps giving 60 lumens per watt. Near-perfect efficiency would be approximately 620 lumens per watt, and about the closest thing to that today is the common firefly—*he* produces 500 lumens per watt! That still leaves science something to shoot at.

SUCCESS STORY: 'Way last December, a picture was taken in Florida. A photographer set up two lamp bulbs 15 feet apart; one was a standard incandescent, one a Westinghouse Bug-A-Way light bulb. There were plenty of insects about, and the test showed amazing results—the standard bulb attracted hordes of bugs, while only a few were near the Bug-A-Way bulb. Moths and many other insects don't fancy yellow light!

IMAGINE: If you think local traffic is bad, put yourself in the position of an insect who often flies through hedges and trees at speeds above 60 m.p.h. And *he* never hits a branch even without traffic lights. Of course, he also has some 600 lenses in each eye against only one in yours. Oh well, we'll just have to hobble along.

More next Month.

Samuel G. Hibben

WESTINGHOUSE LAMP DIVISION Dept. 738
Bloomfield, New Jersey

Please send me more information about the new Westinghouse 90-watt fluorescent lamp.

NAME .....

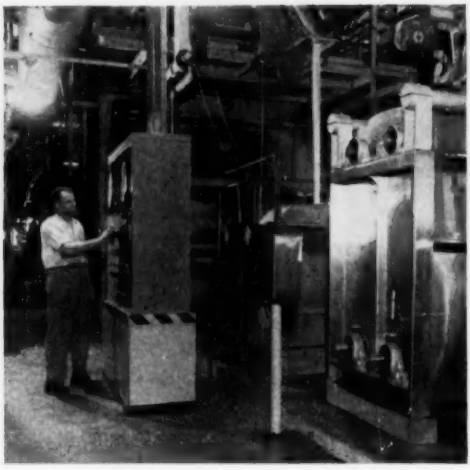
COMPANY .....

ADDRESS .....

CITY ..... STATE .....

BUY NOW AND SAVE! WESTINGHOUSE FLUORESCENT LAMPS STILL COST YOU LESS THAN THEY DID IN 1940, YET BURN SEVEN TIMES LONGER!

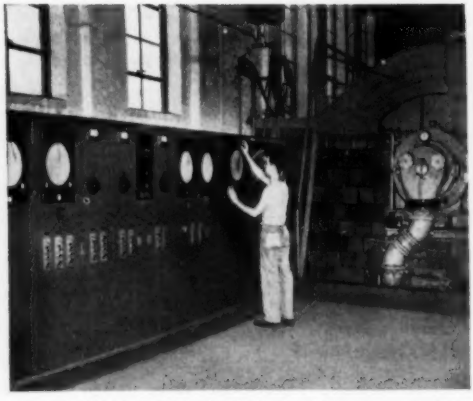
HOT DIP *tin house in large eastern steel mill uses ElectroniK instruments to control metal and palm oil temperatures . . . in adjacent departments, the same instruments control huge electrolytic tin lines, insuring quality tinplate and minimum use of the strategic metal.*



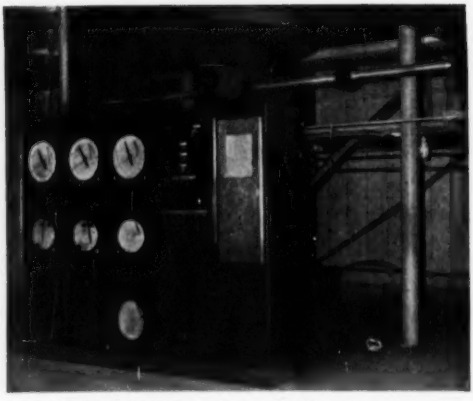
COORDINATION *of speeds, temperatures, pressures, flows and other variables . . . through modern instrumentation . . . makes possible the stabilization of continuous textile bleaching, and results in greater overall production in such a modern installation as this.*

For all of industry . . . *especially*

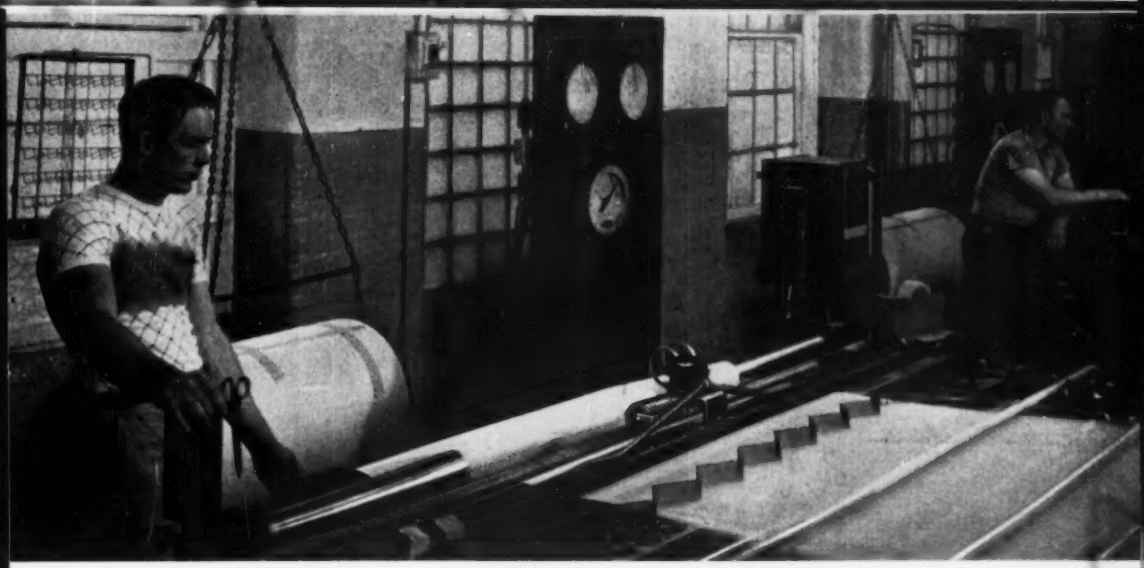
Instruments



ONE MAN BLEACH PLANT, *with the best equipment and controls, produces 130 tons of bleached pulp per day. The plant runs so smoothly that the operator also has time to make hourly tests on bleach liquor and bleached pulp.*



CITRUS CONCENTRATORS *at Pasco Packing Company plant turn out 1250 gallons of high quality concentrate per hour. One man supervises operations . . . aided by Honeywell automatic control system which regulates raw juice flow, heat input, and density of finished product.*



A 25% INCREASE IN PRODUCTION *was effected in this slasher room at Startex Mills with the help of Brown instruments and equipment modification. Plus values are the savings in floor space and operating costs.*

for the textile industry

speed production

THE PRESENT and future progress of the Textile Industry is closely associated with the rate of technological advances which can become production realities . . . and they, in turn, are depending more and more upon the ability of modern instrumentation to help keep pace with demands.

Greater production cannot be at the expense of quality . . . it must join hands with such desirable end results as more weavable warp, faster dyes, and lighter weight fabrics. In the installation pictured above, controlling the moisture content of warp yarn affords greater weaving efficiency . . . which means fewer loom stops and, therefore, increased production. Closely related, of course, is the all-important trend toward lower costs and a favorable competitive position.

The complete line of Brown instruments and controls serves the machine operator with accuracy, speed and dependability in keeping with the standards of performance it has set for the textile scientist in his development program.

Our local engineering representative will welcome the opportunity to discuss all of your instrumentation requirements . . . and he is as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4509 Wayne Ave., Philadelphia 44, Penna.

MINNEAPOLIS
Honeywell
BROWN INSTRUMENTS

First in Controls

● *Important Reference Data*

Write for a copy of new brochure, "Tomorrow Is Today"... for a brief description of the manifold contributions of instruments to industrial processing.

the Old Grey Mare

is better than ~~ain't what~~ she used to be

Thanks to Meadows "Conversions," thousands of long-service spinning and twisting frames... many of them old enough to have been "turned out to pasture" . . . are running faster and smoother, and turning out more yarn than they did in the yearling days.

A typical Meadows "Conversion" consists of the installation of individual drive pulleys, ball bearing tape tension pulleys, aluminum alloy separators, silent chain drive—and high strength polished and ground steel shafting, mounted on heavy-duty, self-aligning ball bearings.

The result is lower power consumption, even tension at all times, a more uniform speed and twist, fewer ends down, and increased yarn production . . . at far less than the capital investment cost of new frames. Can be quickly and easily installed. Write or call us for estimate and particulars.

MEADOWS CONVERSIONS

MEADOWS MANUFACTURING COMPANY • ATLANTA, GEORGIA

Representatives:

JAMES P. COLEMAN
P.O. Box 1351
Greenville, South Carolina

MATTHEWS EQUIPMENT COMPANY
93-A Broadway
Providence, Rhode Island

SAM HOGG
Atlanta, Georgia

COLEMAN-ROWE, INC.
P.O. Box 782
Salisbury, North Carolina

It levels the path of power!

Six rubber balls are the connecting link between driving and driven unit. With the resiliency that only rubber can supply, they dampen the shocks of sudden starts and stops, and reduce or eliminate pulsation or other vibration-causing condition. They add life to the equipment they serve.

The rubber balls are tough, resilient, and long-lived. If or when necessary they can be quickly pushed out and replaced without dismantling the coupling or disturbing alignment.

With this coupling you get not only great shock abosorbing capacity and positive drive without slippage, but also freedom from noise, vibration, and the need for lubrication or other maintenance. Full details in the C-W Coupling Bulletin at request. Address Elliott Company Dept. TW, Jeannette, Pa.

ELLIOTT Company

CROCKER-WHEELER DIVISION

AMPERE, N. J.

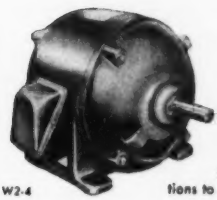
For large motors: RIDGWAY DIV., RIDGWAY, PA.

Plants at: JEANNETTE, PA. • RIDGWAY, PA. AMPERE, N. J. • SPRINGFIELD, O. • NEWARK, N. J.

DISTRICT OFFICES IN PRINCIPAL CITIES

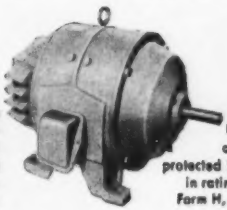
ELLIOTT APPROVED SERVICE SHOPS COVER THE COUNTRY

A FITTING COMPLEMENT TO ELLIOTT C-W MOTORS

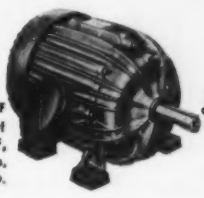


W2-4

SQUIRREL-CAGE PROTECTED FORM BA
Open drippproof motor for general use. Many modifications to meet special needs.

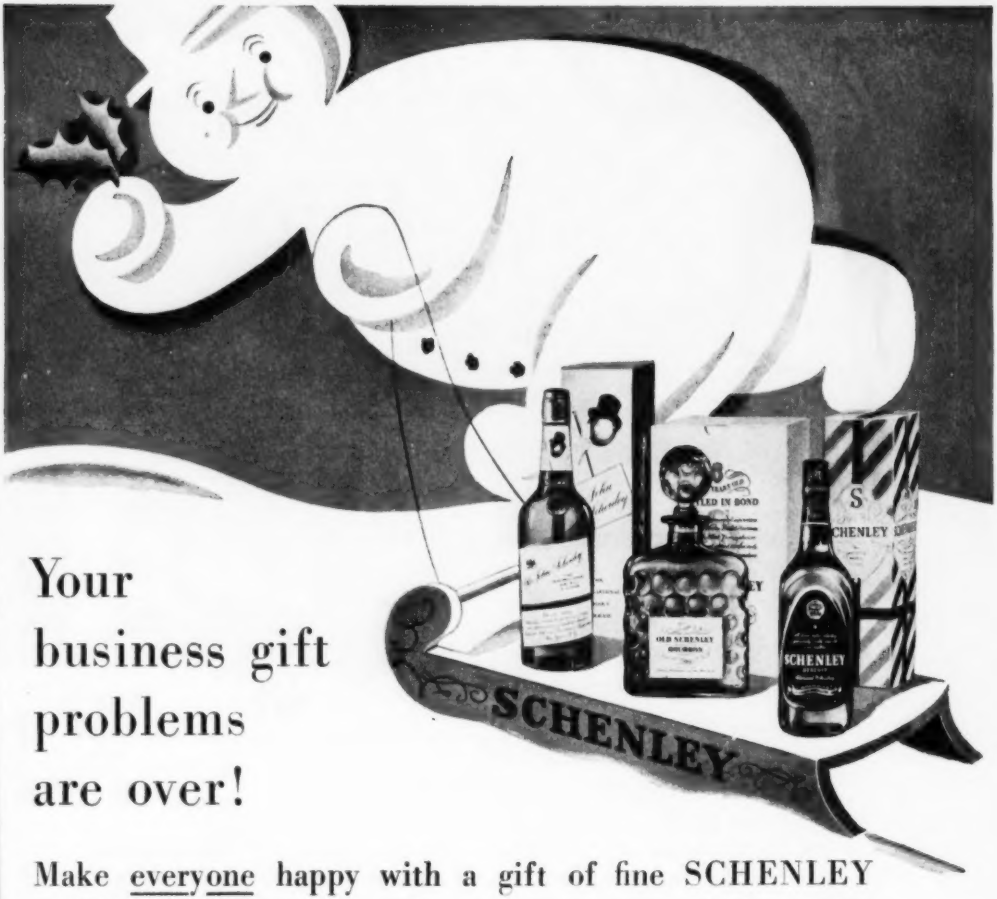


DC DRIPPROOF
and drippproof protected types Form F, in ratings to 7½ hp. Form H, 10 to 200 hp.



"SEALEDPOWER"
The famous C-W motor of ten-year reputation that cools and cleans itself with outside air blast. 3 to 125 hp. Also explosion-proof, 20 to 125 hp.

 For more information, write direct or use Reader Service post card.



Your business gift problems are over!

Make everyone happy with a gift of fine SCHENLEY whiskies. They're convenient to buy, economical to give and, above all, the gifts that no man ever exchanges.

SIR JOHN SCHENLEY *The International Whisky—World's Choicest Blend.* Luxury bottle, luxury carton, luxury whisky . . . every drop of its whisky is 8 years old or older!

BLENDED WHISKY, 86.8 PROOF. 35% STRAIGHT WHISKY. 65% GRAIN NEUTRAL SPIRITS.

OLD SCHENLEY *The gift whiskey you'd much rather keep than give away!* An impressive gift: the greatest of all bourbons . . . in a beautiful decanter. 8 YEARS OLD. Twice as old as most bottled-in-bonds.

STRAIGHT BOURBON WHISKEY, 100 PROOF. BOTTLED IN BOND.

SCHENLEY RESERVE *The best-tasting whiskey in ages!* When you give today's Schenley, you *know* you're giving the best whiskey there is! Handsome gift carton is new! Needs no wrapping.

BLENDED WHISKY, 86 PROOF. 65% GRAIN NEUTRAL SPIRITS.

Nature's unhurried goodness + Schenley's unmatched skill = The best-tasting whiskies in ages!

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(P. S. HOLIDAY PARTIES)

Decanter and gift cartons above at no extra cost.

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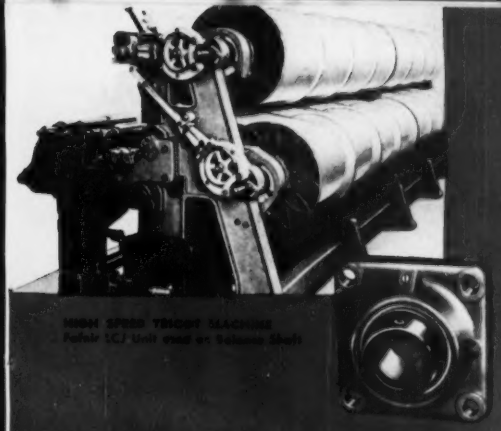
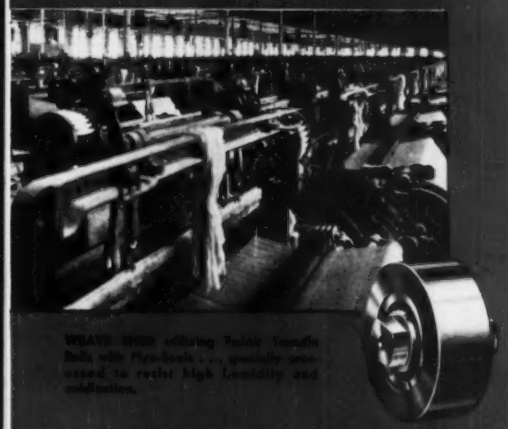
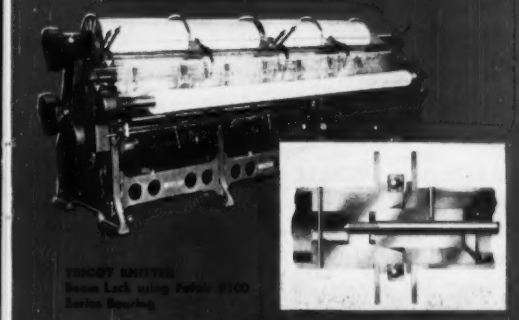
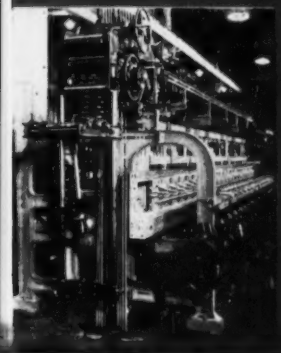
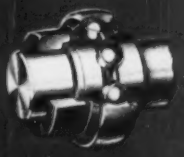










TURNING POINTS

to longer service life for

Modern Looms and Warp Knitters

Although increased loom speeds and high-speed warp knitting put a heavy burden on bearings, longer service life for both the bearings and machines is assured by the use of anti-friction ball bearings. Lighter starting torques, freer running action, and positive, uncontaminated lubrication all help to minimize vibration and wear at high speeds.

The crankshaft, camshaft and rocker shaft on looms make ideal applications for anti-friction bearings . . . especially Fafnir Wide Inner Ring Ball Bearings with Self-Locking Collars . . . easiest of all to install. Yarn tension shafts, cloth take-up shafts and yarn beam drives on high-speed knitters will remain in better operating condition longer when they turn in Fafnir Ball Bearings.

There's a Fafnir Ball Bearing or completely packaged, ready-to-mount Fafnir Textile Unit for every turning point in every standard textile machine. All are "textile designed" and proved by years of money-saving operation in leading mills. The Fafnir Bearing Company, New Britain, Connecticut.

Other FAFNIR UNITS for Weaving and Warp Knitting

Rocker Shaft Unit for Model E Draper Loom

Treadle Roll for Draper "XL" Loom

Camshaft Unit for Model "E" Draper Loom

Crankshaft Unit for Model "E" Draper Loom

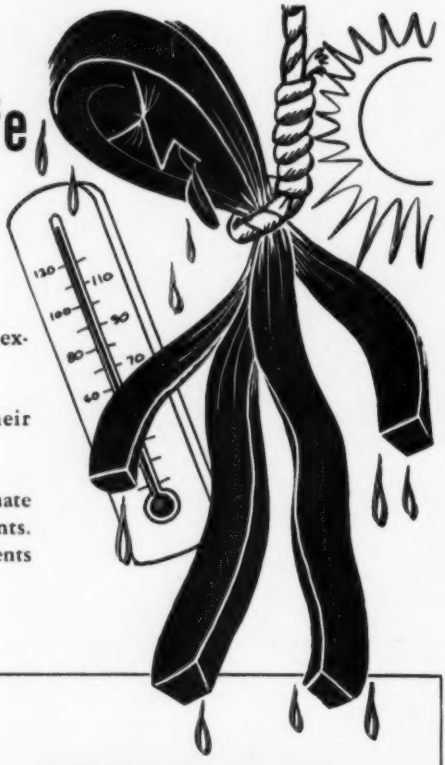
FAFNIR

BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

How to get More Life out of V-Belts

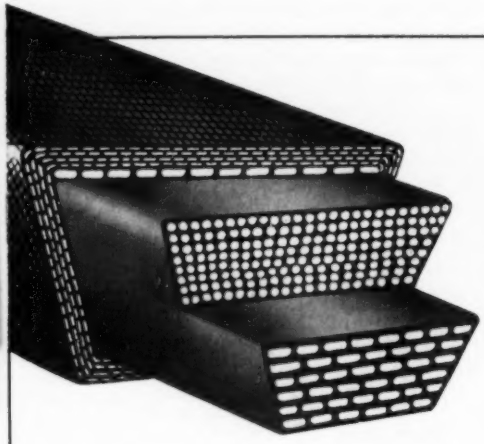
(STORAGE)



DON'T store V-Belts in a hot dry room or expose to the direct rays of the sun.

DON'T hang belts in such a way that their shape will be distorted.

DO specify and store *Bull Dog V-Belts* in adequate supply for your normal replacement requirements. With Bull Dogs on the job "normal" replacements are few and far between.



Your BWH distributor will be glad to show you how Bull Dog V-Belts have the covers, the cords and the compounds to cut *your* belting costs. Call him today.

HERE'S WHY

Their DURABLE COVERS withstand the severe wearing action of the sheave while sealing the belt against grease, dirt, moisture.

There's MINIMUM STRETCH due to a new, exclusive technique which results in fewer takeup adjustments, reduced slippage, longer belt life.

There's a STRONG, SPECIALLY ENGINEERED CORD SECTION with high tensile strength, increased load carrying capacity, ability to absorb shock loads.

The belt TAKES HEAVIEST FLEXING because BWH quality-controlled compounds run cooler and do not crack or deteriorate under severe flexing.

BWH
DEPENDABLE RUGGEDNESS

Another Quality Product of

BOSTON WOVEN HOSE & RUBBER COMPANY

Warehouse Stock: 111 N. Canal St., Chicago, Illinois **Distributors in all Principal Cities**

PLANT: CAMBRIDGE, MASS. • P. O. BOX 1071, BOSTON 3, MASS., U. S. A.

For more information, write direct or use Reader Service post card.

this is for YOU, too

WHITIN MACHINE WORKS
INTER-OFFICE CORRESPONDENCE
TO: Mill Management
FROM: RESEARCH AND DEVELOPMENT DIVISION
RE: PROJECT #R107G - DEVELOPMENT OF SUPERDRAFT ROVING FRAME FOR LONG STAPLE FIBERS
This Superdraft Roving Frame has been completed and is ready for full scale production. The model number "G10D" has been assigned to this frame.
Designed to meet the exacting requirements of processing worsted, synthetic or blended fibers, the new frame will handle all fiber lengths in the range from 2" to 7". As finally approved, the "G10D" incorporates all those features which are known to be necessary and advantageous in processing these fibers, plus many new features suggested by various mills or developed by this department.
In the final analysis, our tests, supplemented by mill reports from pilot installations, prove conclusively that the "G10D" will be simpler to operate, easier to maintain and will produce better roving and better yarn at less cost. For the benefit of the Sales Department, we are listing on the attached sheets the new features and frame accessories.

Special Features of the new Model "G10D" Roving Frame

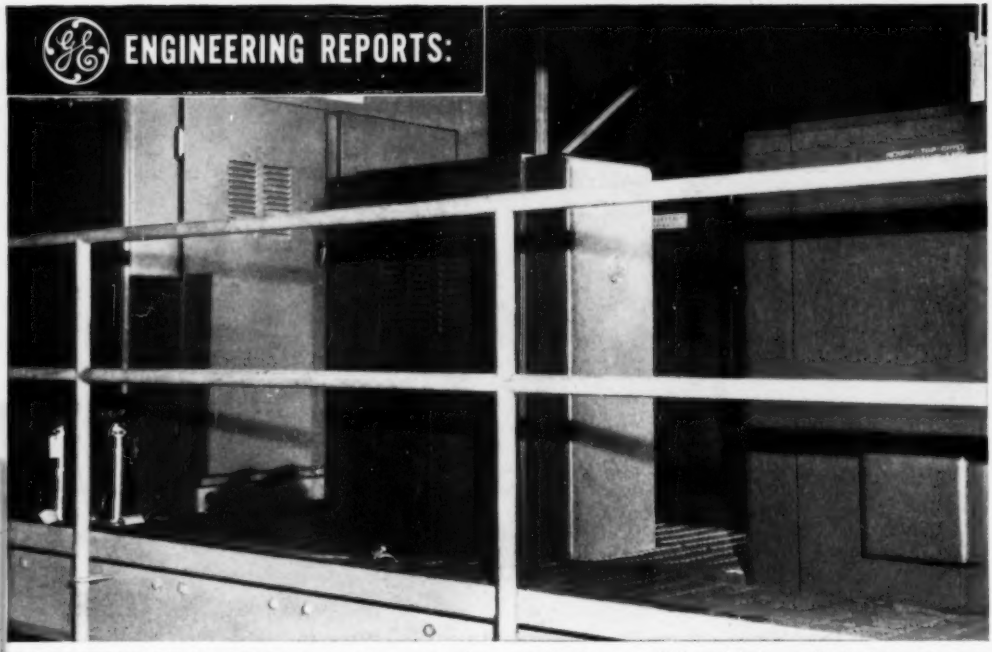
- Processes fibers from 2" to 7" staple
- Inclined roll stands (30°) — twist runs closer to the nip of the rolls
- Elevated roll stands — easier to clean and maintain
- Large diameter anti-friction rolls — top and bottom lines
- Improved spring weighting—accurate, easily adjustable
- Variable lifter roll drive
- New long-cycle traverse motion
- Easily accessible cone lifter and wind-back mechanism

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

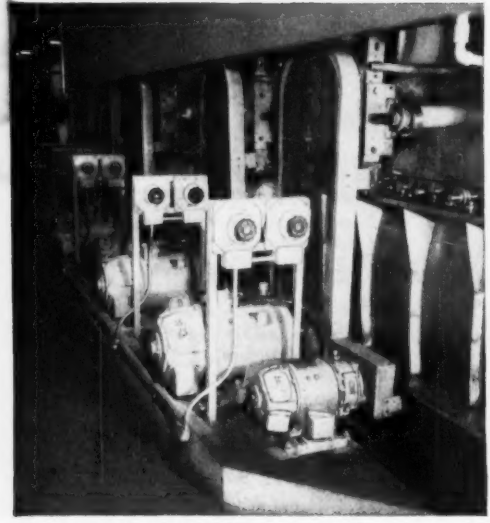
CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

ENGINEERING REPORTS:

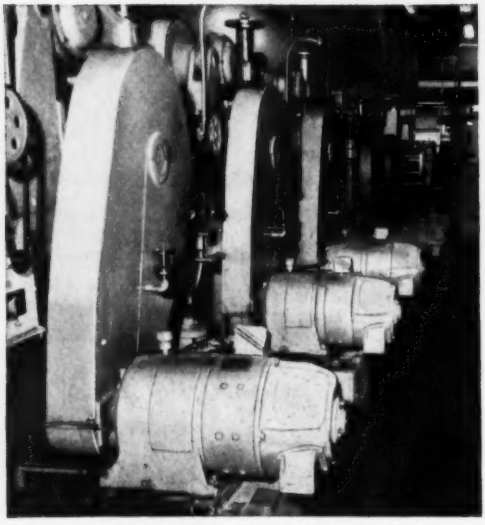


EASY-TO-INSTALL G-E Speed Variator power package can be located practically anywhere. At Delta Finishing Co., some are placed on a grid-floored balcony. Costly interwiring was eliminated—running in conduits was all that was needed.

New G-E packaged range drives



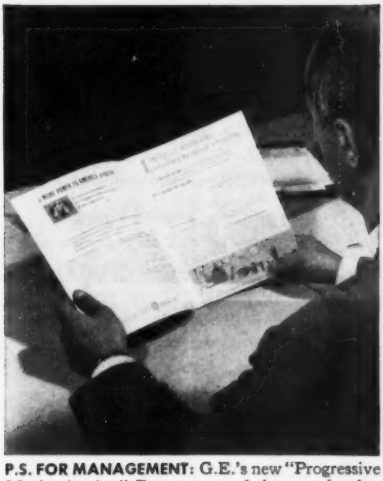
PRECISE SPEED ADJUSTMENT is provided in this scouring washer by individual G-E motor field rheostats.



CAREFUL CO-ORDINATION of four 10-hp G-E splashproof gear-motors keeps four-compartment washer in step.

COMPACT G-E Speed Variator power "packages" save floor space. The four units shown here contain all equipment necessary for powering several ranges at Delta Finishing. Note how compact design of units allows grouping in limited area.

make plant layout more flexible



P.S. FOR MANAGEMENT: G.E.'s new "Progressive Mechanization" Program can help you develop and execute planned mechanization. For free manual GEA-5789, or showing of color film, contact your nearest G-E Apparatus Sales Representative.

Compact Packaged Power units at Delta Finishing Co. save space, cut installation costs

At the Delta Finishing Co. plant in Wallace, S. C. (division of J. P. Stevens & Co., Inc.) the wide variety of range layouts needed makes General Electric packaged drives especially valuable.

A de-sizer, a ten-beam boil-off, a scouring washer, a loop dryer, and a mercerizer washer, among others, are accurately co-ordinated by these adaptable multi-motor systems. Each drive frees important floor space—power units combine motor-generator set, exciter and control panel in single, compact "packages." No special foundation is needed. Units can be located anywhere.

Costs are lowered, too. Power units are mass-produced from standardized parts. Installation or relocation is simple—just set up the power "package," run in the conduit. Range layouts can be changed easily and quickly.

To learn more about range drives that give all the advantages of d-c speed control, ***plus*** the advantages of drive "packaging," call in your G-E textile-mill representative. General Electric Co., Schenectady, N.Y. 654-24

Engineered Electrical Systems for Textile Mills

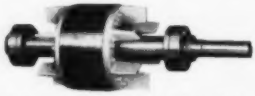
GENERAL ELECTRIC

Century Textile motors are ruggedly built for long service life.

Century TEXTILE MOTORS SHED LINT

Are Well Ventilated for Long Service Life

Strong, rigid cast iron frame, smooth contours permit free circulation of air.



Rotor assembly with ball bearings in place. Large fans assure adequate ventilation.

Rigid cast iron end brackets maintain alignment, provide smooth, quiet starting and running.

Century C MOTORS

Smooth, clean air passages permit cooling air to enter the motor through the end brackets. This steady blast of air circulates over the bearings, around the windings and out through the large air passages in the frame.

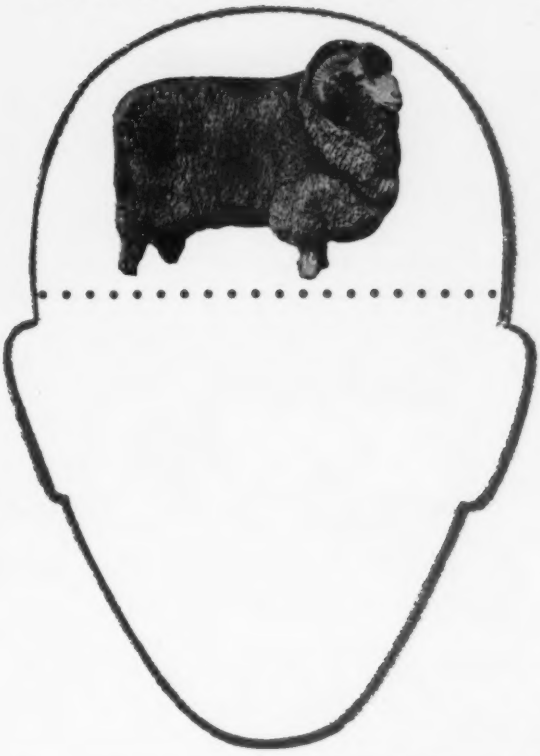
These Century motors are non-clogging — lint and textile dust pass through the motor readily. The motors stay clean, operate at normal temperatures!

In addition to textile motors, Century builds a complete line of electric motors in sizes from ⅛ to 400 horsepower . . . in drip proof, splash proof, enclosed fan cooled and explosion proof frames. Century selective speed drives are also available.

Specify Century for all your textile and standard motor requirements.

CENTURY ELECTRIC CO., 1806 Pine St., St. Louis 3, Mo. • *Offices and Stock Points in Principal Cities*

when you think of wool ...

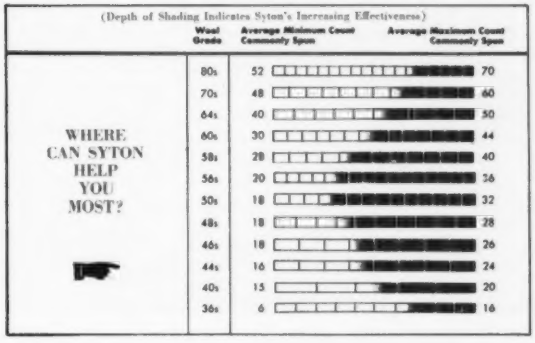


think of

SYTON

Woolen and worsted processing for civilian consumption is again at a high level. Competition is heavy . . . good reason why you should give some extra thought to Syton, Monsanto's silica sol for more efficient and profitable spinning.

Syton boosts the yarn strength of woolens and worsteds from 10 to 30%, depending upon the particular construction. Spinnability is further improved since, with Syton, you get fewer ends down . . . rounder woolen ropings with less apron pressure . . . finer counts from equal stocks . . . equal yarn strength with less twist.



JUST AS EFFECTIVE ON BLENDS—

Syton yields similar processing advantages when used in synthetic-wool blends. In addition, it helps control inter-fiber slippage by causing the smooth synthetic staple to behave more like a serrated wool fiber.

Syton: Reg. U. S. Pat. Off.

ASK FOR NEW SYTON BOOKLET, JUST PUBLISHED

MONSANTO CHEMICAL COMPANY,
Textile Chemicals Dept., Desk TWT-1S
Everett Station, Boston 49, Mass.

Please send me new Syton booklet.

Name & Title _____

Company _____

Address _____

City, Zone, State _____

SERVING INDUSTRY . . . WHICH SERVES MANKIND

MONSANTO
CHEMICALS — PLASTICS

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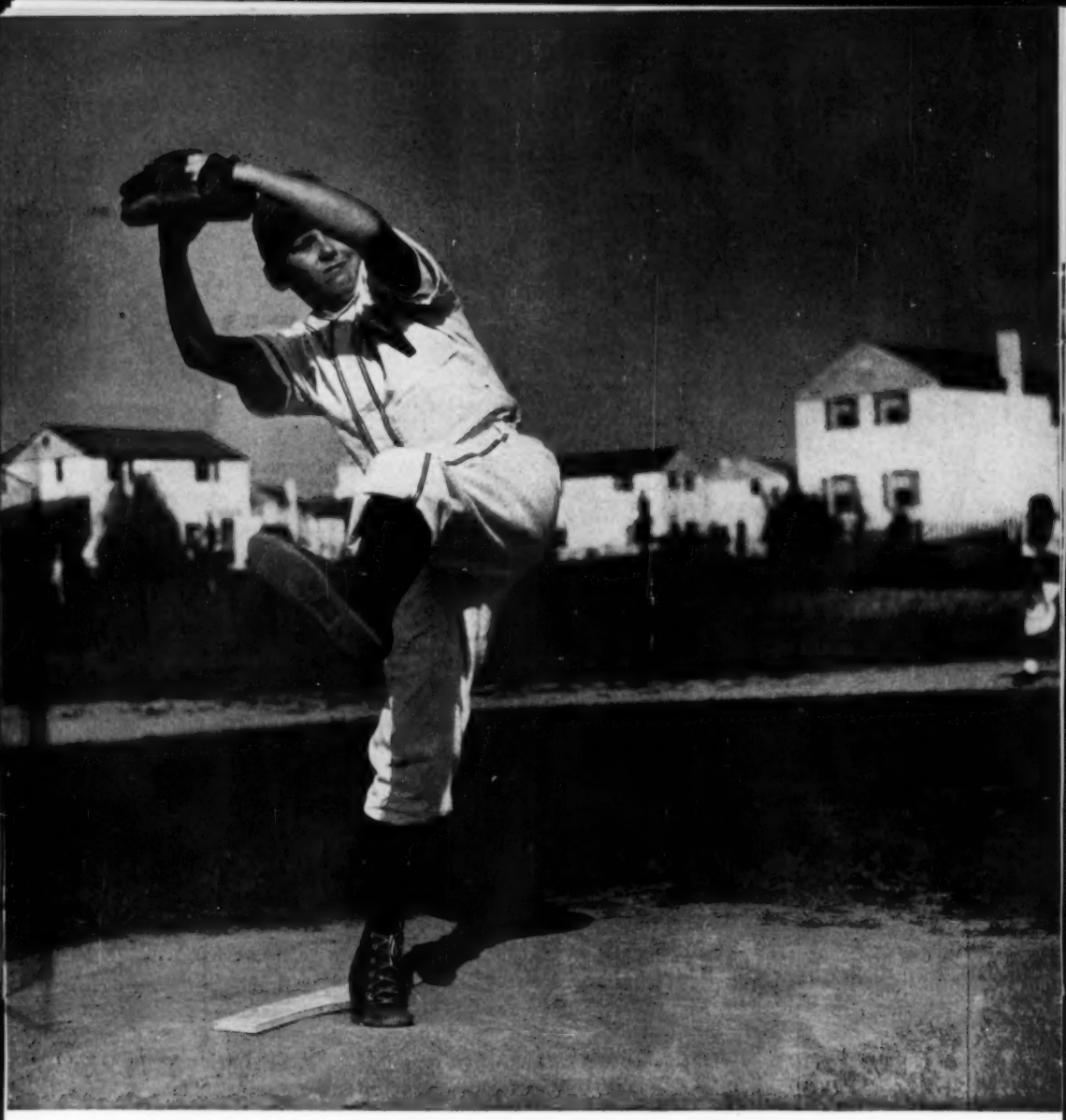


He's a great little pitcher — BUT

How does he compare with Billy Martin?

Billy Martin of Houston, Texas, pitched a no-hit, no-run game to beat Rhode Island, 3-0, in the 1950 Little League World Series at Williamsport, Pa. After a one day rest, he hurled a one-hitter to beat Connecticut, 2-1, and give Texas the 1950 Championship.

In everything we do, we make comparisons . . . In Full-Fashioned Knitting, the one standard for comparison is the 30-section "Reading" Machine with a production of 14 to 16 dozen pairs of superior quality stockings in 8 hours. Simple and flexible in operation. 51-gauge, 60-gauge.

TEXTILE MACHINE WORKS • READING, PENNA.

TEXTILE WORLD
Vol. 102 OCT., 1952 No. 10

A 25-LB. WEIGHT GAIN was reported by one worker after making regular trips through this line.

A FIRST-SHIFT CHEF checks a dish for the first-shift meal. All food is prepared here.

Pepperell's New CAFETERIA Makes Hungry Workers Happy

▶ **Hot nourishing food served in pleasant surroundings encourages better eating habits and fosters good employee relations.**

By **E. DALTON WHITE,** McGraw-Hill Atlanta Bureau

An average of 7,400 meals per week are served in the new cafeteria at Pepperell Mfg. Co., Lindale, Ga. The 2,500 employees average about 52¢ per meal. This high average meal cost reflects the substantial nature of the food selected by the employees, for the cafeteria's prices are well below those of commercial restaurants.

A dietitian runs the cafeteria as a department of the mill, with prices set to barely cover the cost of food and pay for the three-shift kitchen staff. Overhead — which includes space, equipment, maintenance, power, and fuel—is absorbed by the company. Volume purchasing is possible because of a large storeroom with cold-storage facilities.

The high percentage of employees using the cafeteria indicates that the cafeteria serves a useful function. There has been a drop in worker absenteeism and clinic calls, and company officials believe that the health and well-being of its employees have been improved by better eating conditions and habits.

Cafeteria Has Modern Features

The cafeteria area (which required some shifting of production facilities) is made attractive with composition tile on the floors and walls. The cafeteria has a soundproof ceiling, fluorescent lighting, and an air-conditioned eating area.

The eating area seats 300 employees at a time, and the two L-shaped serving lines keep delays to a minimum. The first shift is served from 10:30 a.m. to 1:00 p.m., the second shift from 5:30 to 7:30 p.m., and the third shift from 1:30 to 3:30 a.m. Employees not on the second shift may bring their families and guests for the evening meal. Pepperell's attitude is that the cafeteria belongs to the employees and if they use it as a place to entertain, it is providing a real service.

Employees carry their dishes on trays; and when they have eaten and are about to leave the cafeteria, they deposit the trays and dishes at the window of the dishwasher room. This system avoids the cost of busboys. The dishwasher room is equipped with automatic steam dishwashers and handling equipment.

The food-preparation area includes space for preparing pastries and is equipped with electric mixers, an electric oven, and a refrigerator. The kitchen proper has modern electric appliances and pressure cookers, and the serving counters include steam-tables and salad and dessert sections.

In addition to the cafeteria, Pepperell operates a snack bar for the convenience of its employees.

What About OFF-THE-JOB SAFETY?

▶ Accidents that happen outside of working hours can affect plant operation just as much as in-plant accidents. That's why a well-rounded safety program should include all accident areas.

▶ Here's a nine-point program that can help you to reduce the four major losses that can be attributed to off-the-job accidents.

By ARTHUR S. JOHNSON
Vice President, Engineering Dept., American Mutual Liability Insurance Co.

THE NEARLY 100,000 DEATHS and several million injuries each year from off-the-job accidents have directed the attention of industry to what is being called a major production hazard.

Accidents Make You A Four-Time Loser

Basically, accident prevention to save life and avoid suffering needs no further incentive. But there are losses to industry that are of considerable importance. The first of these is the obvious loss of skilled workers and the cost of training replacements.

The second finds root in the adverse psychological effect that a disabling accident in a worker's family has on that worker. Worry over an injury that has occurred, worry over how the bills will be paid, worry over who will take care of the children, and worry over possible permanent disability are mental distractions that contribute to on-the-job accidents and hamper individual production.

The third loss arises from the very troublesome and costly factor of absenteeism. Off-the-job accidents result in considerably more days of involuntary absence from work than on-the-job accidents. (An Insurance Economics Survey reports an average cost for absenteeism of $56 per year for every employee on the payroll.)

The fourth loss is strictly a dollar-and-cents one. Group insurance costs run higher than workmen's compensation costs. It is not uncommon for a business to achieve rate credits of 35 to 40% through result-getting, on-the-job safety programs. In most cases, the same cost-reducing effect can be achieved on group-insurance premiums.

Why Management Hasn't Tackled the Problem Before

Management has found it difficult to deal with this problem for two reasons: (1) the fear that employees would resent recommendations for off-the-job safety as an intrusion into their homes; and (2) a tested, long-range program has not been available.

There is a broad interest in the off-the-job safety problem, and there appears to be a willingness to go ahead as soon as certain key questions have been answered:

What is a practical plan of approach? How can management establish and conduct such a plan? How can the employees' voluntary interest and participation be secured? Where can the necessary materials be secured? How much does such a program cost?

We believe that the program outlined here answers all these questions.

These Figures Are Staggering—

677 Days Lost . . . from off-the-job accidents in a Massachusetts mill employing 600 workers. Only seven-day and longer absences tabulated (1951).

1,344 Days Lost . . . from off-the-job accidents in a Philadelphia mill employing 4,000 workers. Only seven-day and longer absences tabulated (1951).

Here Is a Nine-Point Program

The company program that has been devised by our organization to serve this purpose and meet this problem involves nine basic parts:

1. **A sample letter** has been designed to send to each family at home, in order to give the program an official standing and to make the company's interest known. The letter states the conditions that make such a program important and outlines the plans designed to help the members of a family live safer lives.
2. **An audience-participation quiz program** has been developed to arouse interest in highway and home safety.
3. **A home-safety check chart** has been prepared to help the family eliminate unsafe conditions in and about the living area.
4. **A safety "Show-How" booklet** is published twice a year. Through words and pictures it provides health information and describes how to live safer, how to handle emergencies, and how to give first aid.
5. **Additional individual booklets** are published to cover specific hazards, especially if they are seasonal. A typical booklet might cover fires, ladders, splinters, or antibiotics.
6. **Safety posters** for plant bulletin boards are designed to maintain interest in the off-the-job safety program.
7. **Safety material** for use in company house publications is provided. The house publication normally represents the most consistent avenue of communication with employees.
8. **Incentives through competitions** are called for in the plan. Inter-group competition for the best off-the-job safety record with tangible or intangible recognition, and a scholarship essay competition among the children of employees on the subject "What We Have Done To Make Our Home Safer" help to maintain interest in the off-the-job safety program.
9. **An accident-investigation form** has been prepared to disclose accident sources and causes.

Most of This Material Is Readily Available

Most of the material, in one form or another, is readily available from the National Safety Council, and from several of the life-insurance companies and casualty companies, both stock and mutual. As a coordinated whole, the material organized in program form is available from the American Mutual Liability Insurance Co.

The Cost of Material Is Low

Material for a practical, result-getting program can be supplied within a budget of $1.00 a year per family.

A Maine Cotton Mill

A comb tender who was a member of the mill safety committee forgot to replace the cover over one box and received severe injuries to his hand when he placed it over the unguarded comb.

Investigation disclosed that one of his children had sustained a crippling injury in a motor accident.

The worker admitted his mind had not been on his work because of this mental strain.

A Rope Mill

A worker caught his toe in a box strap and fractured his hip when he fell.

Investigation disclosed that his wife had been in the hospital for several weeks because of a severe head injury sustained when she fell down the stairs.

The worker stated that his accident probably would not have occurred "had it not been for my concern for the welfare of my wife, particularly how to care for her when she returned home."

A South Carolina Mill

A worker struck his head against a fire bucket placed well out of walking areas and suffered a severe head injury. The worker was unable to explain this unusual accident.

Investigation disclosed that his son had been arrested for reckless driving and was in jail.

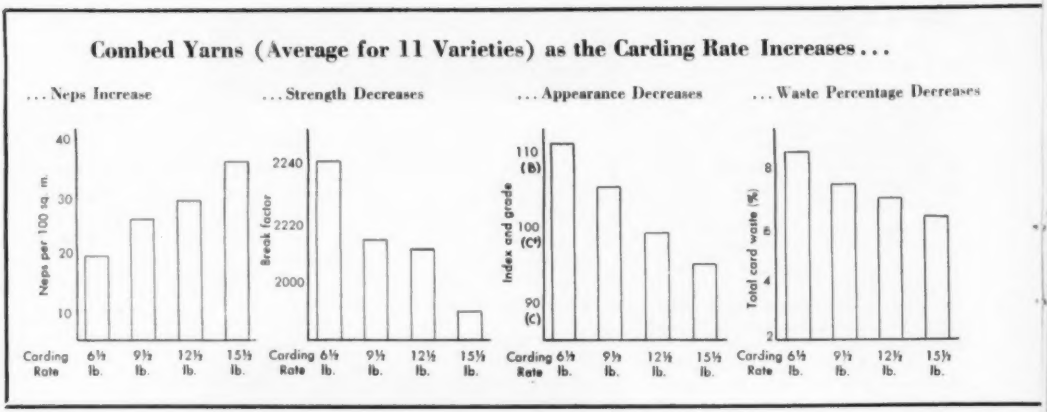
The worker admitted that he had been worried about his son at the time of the accident.

A Georgia Mill

The master mechanic unscrewed the fill cap of a gasoline blow torch without releasing the pressure. He was badly burned about the face and hands when the out-rushing vapors were ignited by his other torch.

Investigation disclosed that his son and wife were badly burned when the three-year-old boy knocked a saucepan filled with boiling water off the stove.

The mechanic said, "I guess I wasn't thinking of my work. I knew the danger but I was just tired and sleepy. I didn't see how I could stand the expense of sending my wife and child to the hospital, so I tried to take care of them myself."


Combed Yarns (Average for 11 Varieties) as the Carding Rate Increases . . .
. . . Neps Increase
. . . Strength Decreases
. . . Appearance Decreases
. . . Waste Percentage Decreases
Neps per 100 sq. in.
Break factor
Index and grade
Total card waste (%)
Carding Rate
6½ lb.
9½ lb.
12½ lb.
15½ lb.

What Happens When You Speed Up COTTON CARDS?

▸ Most carders know that slow card production and high quality go hand in hand. A USDA study at Clemson, S. C., and College Station, Tex., substantiates this opinion, but it also shows how much fast card production—

- **Increases neps**
- **Lowers yarn appearance**
- **Decreases yarn strength**
- **Decreases card waste**

By P. M. THOMAS, Editor, TEXTILE WORLD

PRACTICALLY ALL CARDERS are convinced that if they slow down their cards they will have fewer neps, better yarn appearance, and less card waste. But not many of them know how much.

The tests reported in this article were made to provide mill men with an answer to how much the carding rate affects neps, yarn appearance, and card waste.

Eleven varieties of American Upland cotton were tested in the carded-yarn series. In the combed-yarn series, eight Upland, one Egyptian, and two American Egyptian varieties were tested.

Average Results Were—

The USDA report gave specific results for each of the 22 varieties tested. To get a composite picture, TEXTILE WORLD reduced the USDA data to averages for card production at the rates of 6½, 9½, and 12½ lb. per hr. (and in the case of carded yarn, of 15½ lb. per hr.). This composite picture shows that—

—For carded yarns, as the carding rate increases:
Neps increase steadily
Yarn strength, yarn appearance, and card waste decrease steadily

—For combed yarns, as the carding rate increases:
Neps increase steadily
Yarn strength and yarn appearance remain level until after 9½ lb. per hr. and drop off sharply at 12½ lb. per hr.
Card and comber waste combined remains steady

This composite picture, with the amounts of increase and decrease, is shown in the eight accompanying graphs labeled "Average for 11 Varieties."

Data shown in the other graphs and tables were taken directly from the USDA report. Results are given for each variety of cotton tested.

Fast or Slow Card Speeds?

In the May issue of TEXTILE WORLD on p. 107, we published an article entitled "We're Carding at 25 lb. per Hr." That article gave the experience a mill had in varying card settings and speeds. Results were somewhat astonishing.

Carding results discussed in the accompanying article seem to conflict with the results reported in the May issue. Actually, that is not the case.

This point of difference should be kept in mind: The accompanying article is based on what might be called standard carding practices. Settings and speeds of the card parts were those normally found in nearly every card room in the country. The only variable was the pounds per hour carded.

The May article was a report on a remarkably successful experiment, which you may or may not want to try.

This article tells you what you may expect if you need more card production and merely change your card production gears to get it.

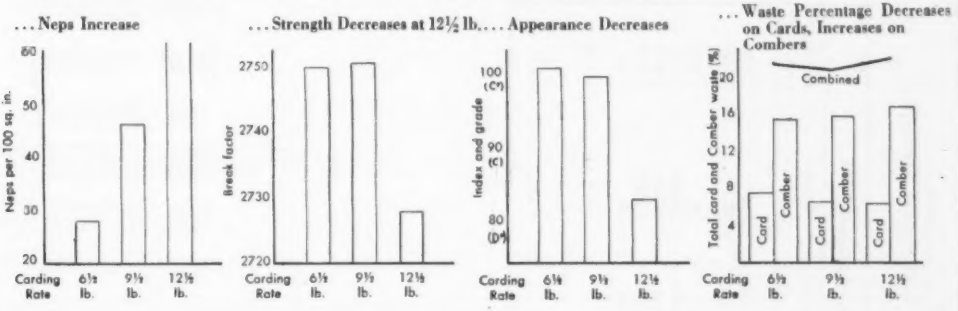
Who Made the Tests

The U. S. Dept. of Agriculture made the tests. The chief planner and director of the project was John W. Wright, Chief, Research and Testing Div., Cotton Branch, assisted by Roland L. Lee, Jr.

The spinning tests were conducted at the Cotton Laboratories at Clemson, S. C., and College Station, Tex.

The report, "Performance of Selected Commercial Varieties of Cotton When Processed at Varying Rates of Card Production," was written by Joseph T. Rouse and Samuel T. Burley, Jr., cotton technologists.

Carded Yarns (Average for 11 Varieties) as the Carding Rate Increases . . .



HOW THE TESTS WERE RUN

Process	Carded yarns: Amer. Upland varieties	Combed yarns: Amer. Upland varieties	Combed yarns: Egypt'n & Amer. Egypt'n varieties
1. PICKER			
Weight of lap (oz. per yd.)	11	11	11
Type of beater	Kirschner	Kirschner	2-blade
Beater speed (rpm.)	1,000	1,000	1,000
Settings (in.)			
Feed roll to beater	3/16	3/16	3/8
Grids to beater, top	5/16	5/16	9/16
Grids to beater, bottom	11/16	11/16	9/16
2. CARD			
Feed, picker lap (oz. per yd.)		11	
Delivered sliver (grains per yd.)		40	
Cylinder speed (rpm.)		165	
Speed of flats (in. per min.)		2 7/8	
Lickerin speed (rpm.)		435	
Settings (in.)			
Feed plate to lickerin		0.010	
Mote knife to lickerin, top		0.012	
Mote knife to lickerin, bottom		0.010	
Lickerin screen, front		0.029	
Lickerin screen, back		0.017	
Lickerin to cylinder		0.007	
Flats to cylinder		0.009	
Back plate to cylinder, top		0.029	
Back plate to cylinder, bottom		0.034	
Front plate to cylinder, top		0.029	
Front plate to cylinder, bottom		0.034	
Doffer to cylinder		0.007	
Cylinder screen, back		0.029	
Cylinder screen, center		0.034	
Cylinder screen, front		3/16	
Doffer comb to doffer		0.022	
3. SLIVER LAPPER (combed only)			
Fed, 20 slivers (wt. per yd. each, grains)		40	40
Delivered lap (grains per yd.)		525	485
Speed (yd. per min.)		46	46
Roll settings (center to center)			
First to second (inches plus fiber length)		5/16	5/16
Second to third		9/16	9/16
4. RIBBON LAPPER (combed only)			
Fed, four sliver laps (grains per yd. each)		525	525
Delivered lap (grains per yd.)		610	610
Speed (yd. per min.)		47	47
Roll settings (center to center)			
First to second (inches plus fiber length)		4/16	4/16
Second to third		7/16	7/16
Third to fourth		10/16	10/16
5. COMBER (Model D-4)			
Fed, eight ribbon laps (grains per yd., each)		610	610
Delivered sliver (grains per yd.)		40	40
Production per hr. (lb.)		13	13
Setting			
Cushion plate to detaching roll (in.)		0.48	0.48
6. DRAWING FRAME (leather top rolls)			
First process			
Fed, six slivers (grains per yd. each)	40	40	40
Delivered sliver (grains per yd.)	41.9	48	48
Second process			
Fed, six slivers (grains per yd. each)	41.9	—	—
Delivered sliver (grains per yd.)	43.8	—	—
Speed (yd. per min.)	36	36	36
Roll settings (center to center)			
First to second (inches plus fiber length)	4/16	4/16	4/16
Second to third	7/16	7/16	7/16
Third to fourth	10/16	10/16	10/16
7. LONG-DRAFT ROVING (6x4 two-apron type)			
Fed, one sliver (grains per yd.)	43.8	48	48
Delivered, 2.50 through 4.50 hanks			
Spindle speed (rpm.)	1,250	1,250	1,250
Roll settings (center to center)			
First to second, standard (in.)	2 1/4	2 1/4	2 1/4
Third to fourth (inches plus fiber length)	1/4	1/4	1/4
8. REGULAR-DRAFT ROVING (6x3, for 80s only)			
Fed double (hanks each)		3.25	3.25
Delivered (hanks)		8.50	8.50
Spindle speed (rpm.)		1,200	1,200
Roll settings (center to center)			
First to second (inches plus fiber length)		2/16	2/16
Second to third		4/16	4/16
9. LONG-DRAFT SPINNING (two-apron type)			
Fed double for 14s (hanks each)	2.35	—	—
for 22s	3.25	—	—
for 36s	3.25	3.25	3.25
for 50s	4.50	4.50	4.50
for 80s	—	8.50	8.50
Spindle speeds for 14s and/or 36s (rpm.)	9,000	9,000	9,000
for 22s	9,500	—	—
for 50s and/or 80s	8,500	8,500	8,500
Roll settings (center to center)			
First to second, standard (in.)	2 1/16	2 1/16	2 1/16
Second to third, standard (in.)	1 3/4	1 3/4	1 3/4

(Continued on next page)

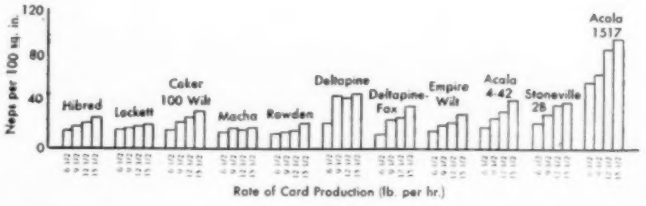
WHAT HAPPENS WHEN YOU SPEED UP COTTON CARDS? *(Continued)*

COMBED YARNS (Individual Varieties)

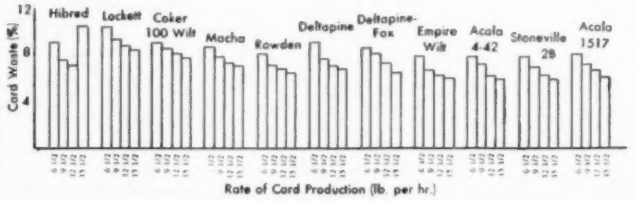
Cotton Used for Carded Yarn

Type and variety	Area of growth	Grade	Staple length (in.)
American Upland			
Hibred	Texas	SMltsp	29/32
Lockett	Texas	SMltsp	15/16
Macha	Texas	SLM	15/16
Rowden	Arkansas	SM	1
Coker 100 Wilt	South Carolina	SM	1 1/32
Deltapine	Mississippi	M	1 1/32
Deltapine-Fox	Mississippi	M	1 1/32
Empire Wilt	Georgia	M	1 1/32
Acala 4-42	California	SMEW	1 1/16
Stoneville 2B	Missouri	M	1 1/16
Acala 1517	New Mexico	SMEW	1 1/8

NEPS



CARD WASTE

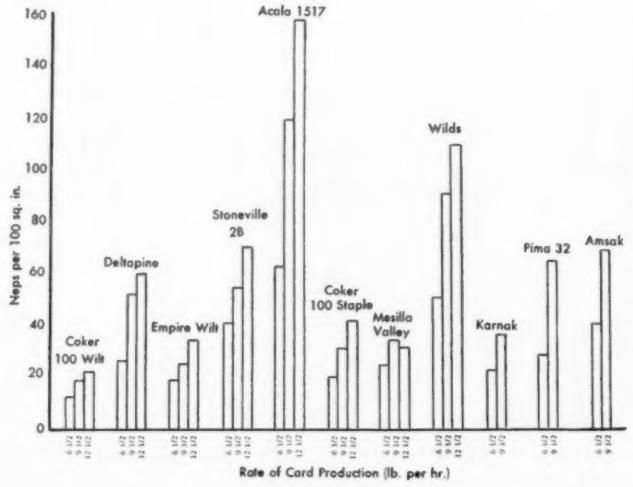


CARDED YARNS (Individual Varieties)

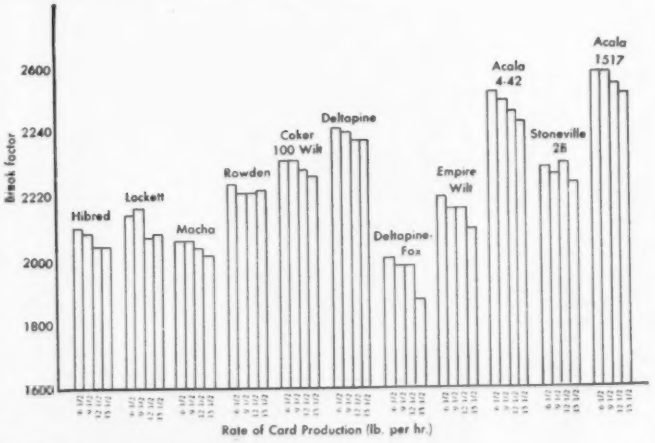
Cotton Used for Combed Yarn

Type and variety	Area of growth	Grade	Staple length (in.)
American Upland			
Coker 100 Wilt	South Carolina	SM	1 1/32
Deltapine	Mississippi	M	1 1/32
Empire Wilt	Georgia	M	1 1/32
Stoneville 2B	Missouri	M	1 1/16
Acala 1517	New Mexico	SMEW	1 1/8
Coker 100 Staple	Mississippi	SLM+	1 3/16
Mesilla Velley	New Mexico	SMEW	1 7/32
Wilds	Mississippi	M	1 1/4
Egyptian			
Karnak	Egypt	1 1/2 AE	1 7/16
American Egyptian			
Pima 32	Arizona	2 AE	1 15/32
Amsak	Arizona	1 AE	1 1/2

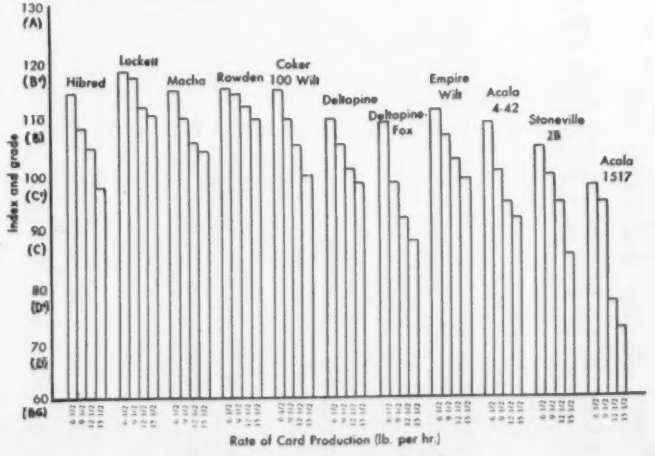
NEPS



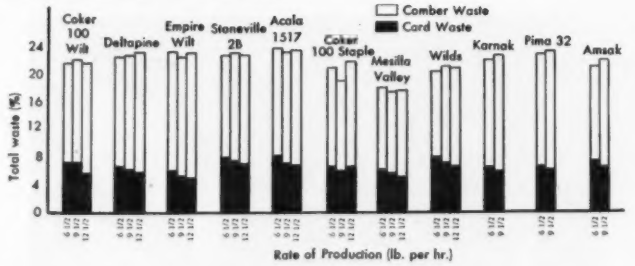
YARN STRENGTH (Count x Break)



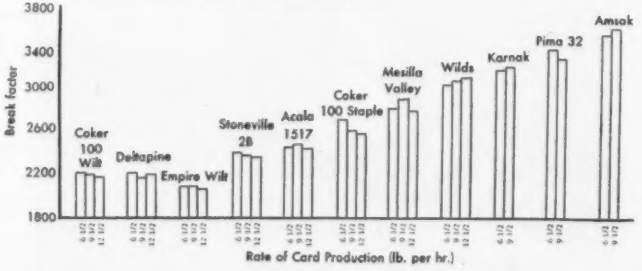
YARN APPEARANCE



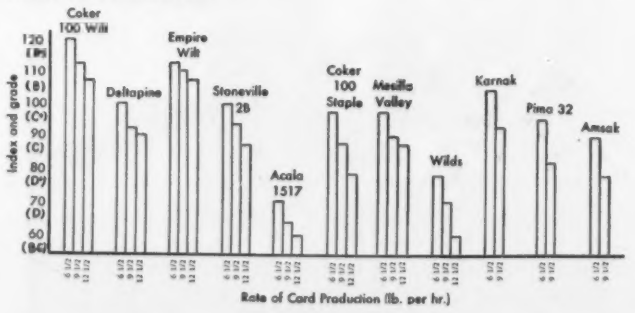
CARD and COMBER WASTE

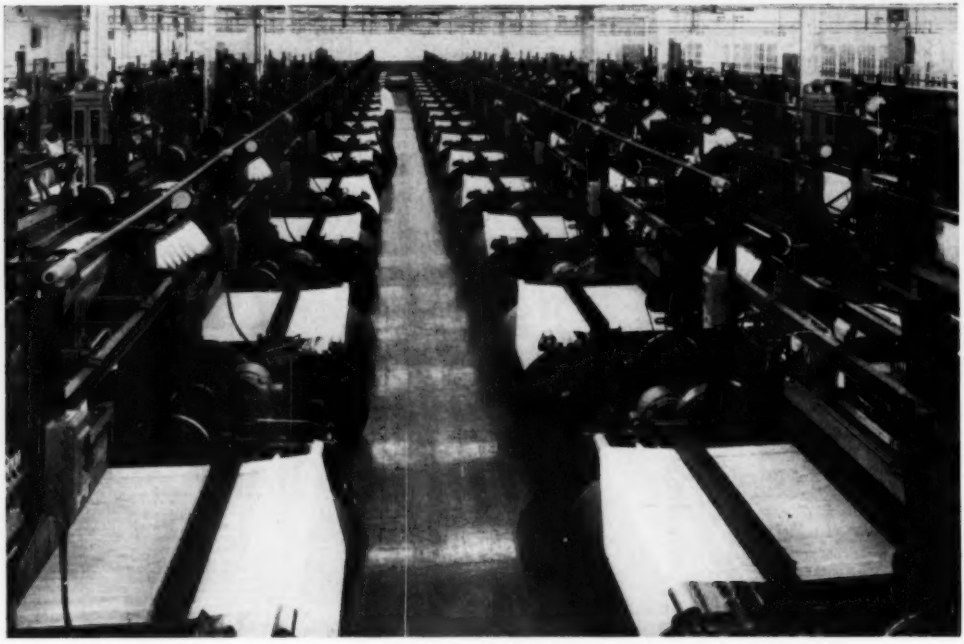


YARN STRENGTH (Count x Break)



YARN APPEARANCE





Two New Ideas in WEAVE-ROOM *Organization*

▶ The need for specialists in the weave room of today is apparent to the overseer who wants to stay in the picture on all his weave-room developments. For better weave-room control and operation, this article recommends—

- **A supervisor of loomfixing**
- **A supervisor of lubrication**

Pointing out that this is the day of specialists, *Draper Digest*, house organ of Draper Corp. for its export customers, has a suggestion for the improvement of weave-room organization that should interest every overseer who is alive to the best in weave-room management. Information contained in this article was provided by *Draper Digest*.

THE MODERN LOOM is designed to make the work of the weaver easier, to overcome the weaving faults that once were common—and to keep on running.

Loomfixers must be taught to set up looms so that they will run; but once they are taught, the loomfixers must be supervised.

Loomfixing supervision should be coordinated with lubrication supervision in order to insure continuous-loom operation at a high production figure.

1

The Loomfixing Supervisor

The best loomfixing can be obtained if a specialist is placed in charge of all the looms of a weave room. A good loomfixer, one who knows the settings of all loom mechanisms, should be selected as a supervisor of loomfixing. He must be qualified to teach other loomfixers.

He should be given full responsibility for maintaining loom standards, and he should check the work as it is being done by the loomfixers to see that the various units are set correctly and that the correct settings are maintained.

If more than one shift is run, the supervisor of loomfixing should coordinate the work of all the loomfixers and see that fixers on all shifts use the same loom settings.

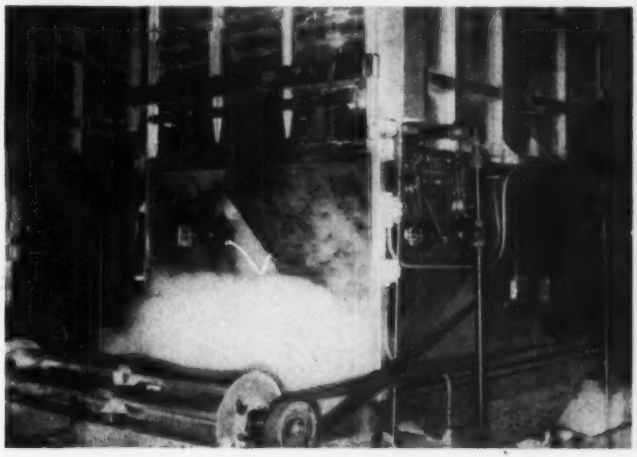
A book of standard loom settings

(*Continued on page 200*)

BLEACHING, DYEING, FINISHING Section

Edited by **GEORGE M. MOISSON**, Assistant Editor, TEXTILE WORLD

Machinery Built for the Job, Used by Men With Know-How, Makes Finishing PILE FABRICS Seem Easy



MINIMUM DAMAGE, TOP QUALITY are to be expected when easily crushed goods are run open-width.

■ **Fiber E has "found a home" at Eagle Dyeing & Finishing Co., Mount Holly, N. J., among men who have worked out techniques for handling it**

■ **Frieze goods, after rubberizing, stand up well to wet processing and present a more useable fabric to the upholsterer**

CUT-PILE FABRICS of Fiber E are finished completely in the gray to eliminate crush marks. If the nap is not allowed to crinkle evenly during causticizing, crush marks will show up as permanent scars on the fabric.

The caustic, in dilute solution, is applied cold to the goods. Great care is taken to assure that impregnation is uniform, neutralization is complete, and the goods are well washed before they are dried. Neutralization is

MULTIPLE-STRAND ROPE DYEING is used on some fabrics, such as mohair-cotton blends, that are not harmed by the process.

accomplished with acetic acid or, in some cases, with sodium bicarbonate.

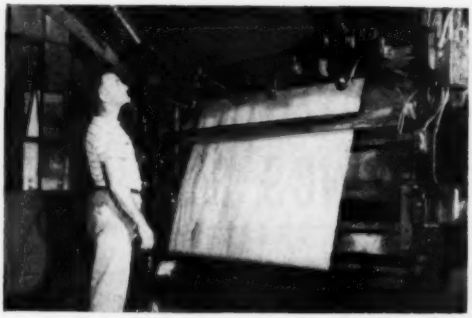
Rubberizing Serves Two Purposes

A rubber backfilling is applied to fabrics that are to be used for upholstery. The rubber used is a synthetic latex emulsion, compounded to suit the needs of the particular goods. End use, handle, and fabric weight and construction have to be considered. The rubber serves to bond the pile into the goods and reduces considerably the chances of damage during processing.

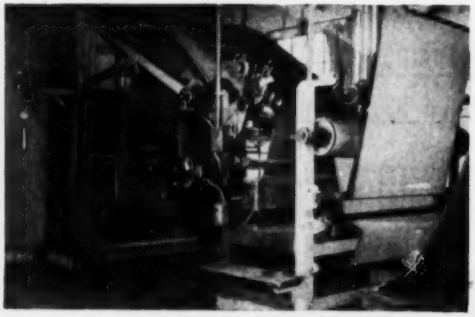
As a rule, all goods—other than Fiber E, which must be prefinished—are rubberized as soon as convenient after they arrive. This procedure serves to protect the appearance of the goods during storage.

Retarding Agents Are Used

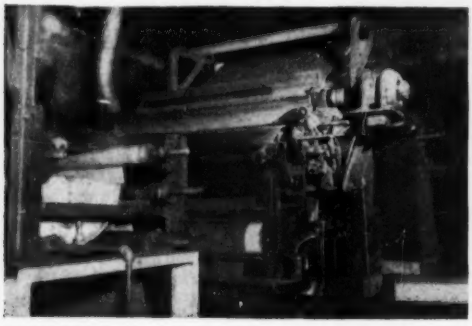
After causticizing, Fiber E has a high affinity for direct dyes. This factor must be considered when a union or near-union shade is desired with a cotton or other cellulosic-base fabric. Retarding agents and careful control of temperature and time will



PILE IS SNAPPED UP by this multiple wooden-blade beater after extraction. Goods then can be dried with the nap upright.



GOODS ENTER A MULTIPASS DRYER on pins that slowly draw the fabric to 54-in. width to recover wet-processing shrinkage.



STEAM CHEST, left, conditions and raises the pile before the shear trims off the fuzz. From here, goods go to the perch.

INSPECTION, MEASUREMENT, AND BATCHING take place before goods are shipped to the customer.

give satisfactory results with cotton and Fiber E.

The crinkle apparently is set more firmly in Fiber E because of the working action during dyeing and appears to become tighter.

After the final shade is reached, goods are cooled slowly during rinsing to prevent wrinkle-setting. Goods are squeezed, vacuum-extracted, beaten by a rotary wooden-blade beater to snap up the pile, and dried in a Hunter multipass pin dryer to the regulation 54-in. width. A light shearing is given to remove the fuzz from the tops of the curls.

Fiber E yarns of 900 and 2,700 den. are being used in plain and jacquard designs for upholstery fabrics. A poodle-cloth fabric for the cloaking trade is being made from the 300-den. yarn.

Eagle Works With Du Pont

The success that Eagle has had with Fiber E processing has grown out of its cooperation with the Du Pont staff at Wilmington, Del. Experimental work has been done on a large number of fabrics, and a lot more work must be done to reduce the amount of handling and the cost of the process.

A particularly good machine for dyeing pile fabrics is being used for Fiber E at Eagle. The triangular, self-centering dye reel keeps the fabric folded evenly in the dye bath. The operator has less to do when he runs this Hunter kettle, so he can handle more equipment.

No Limit to Frieze Combinations

Frieze fabrics, other than those containing Fiber E, that are being handled at the plant are rayon-mohair-and-cotton blends, rayon-and-mohair blends, spun and filament nylon, and coarse and fine counts of all combinations and descriptions. Styles containing a percentage of mohair are the most widely used.

A Typical Frieze Procedure

Mohair-and-cotton blend

1. Rubberize gray goods, cure, and batch in lots of 10 pieces, unless the order is large enough for continuous scouring.

2. Scour at 130° F. in a mildly alkaline bath containing pine oil, sulfonated fatty alcohols, and trisodium phosphate. A seven-bowl crab is used for large lots. Small lots are given either a rope or open-width scour in a dye kettle.

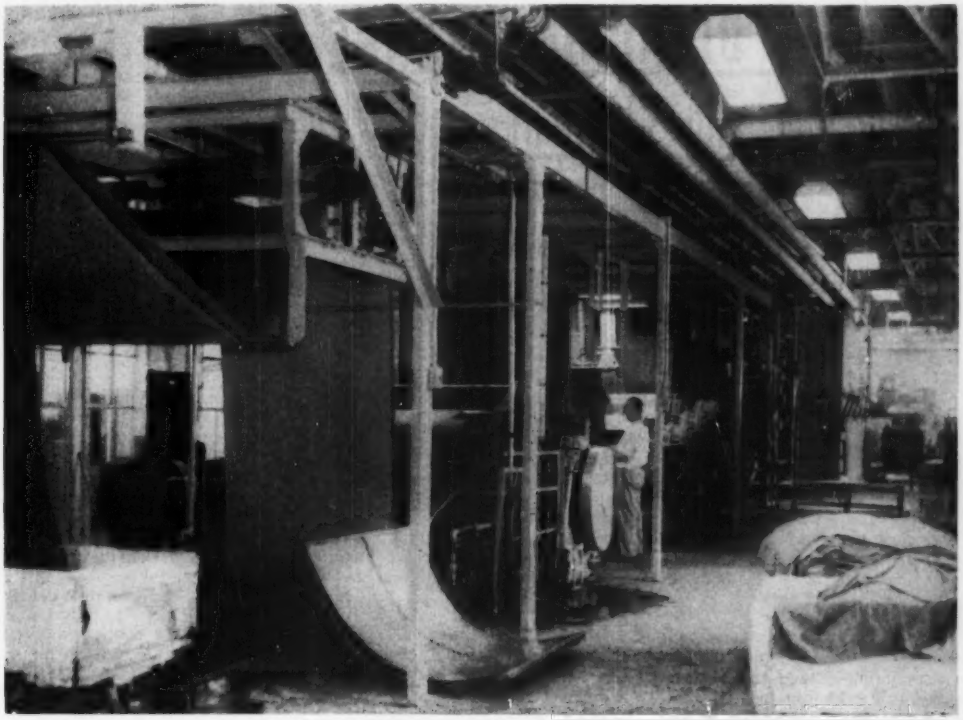
3. After a rinse is given, the dye bath is prepared. Colors used are fast-to-light directs and neutral-dyeing acid colors. The bath is started at 120° F., slowly raised to 180 to 190° F., and continued for 30 min. to 1 hr.

4. At this point, consideration must be given to the shade change that occurs when the mothproofing treatment is given during the next step of processing. A change in shade occurs in directs, and different bloom and increased depth occur in the wool colors.

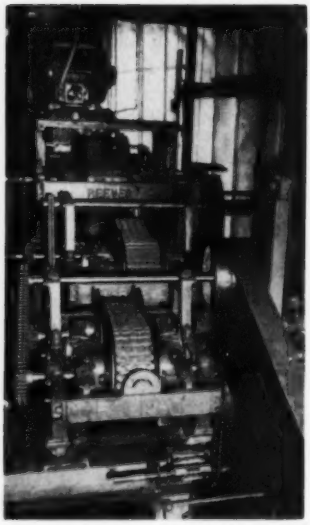
5. A warm rinse is given after dyeing to prevent sudden chilling of the goods, a mistake that can cause permanent wrinkles.

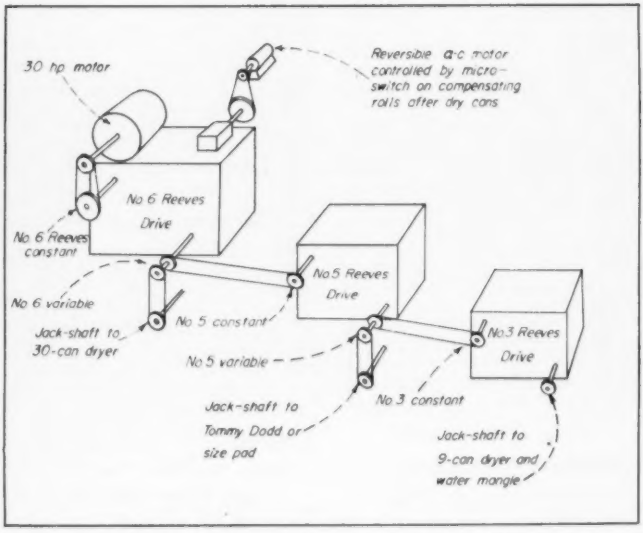
6. Mothproof goods at 110° F. with ammonium (or sodium) silicofluoride for 20 min. to exhaust the compound on the mohair.

7. Extract, beat, and dry at 54-in. width. During drying in the pin dryer, the goods are stretched enough to recover all the fillingwise shrinkage and most of the warpwise shrinkage.



GENERAL VIEW of one of Eagle's finishing ranges shows wet goods entering at the left and leaving the dryer at the far right.




30 hp motor
Reversible a-c motor controlled by micro-switch on compensating rolls after dry cans
No. 6 Reeves Drive
No. 6 Reeves constant
No. 6 variable
Jack-shaft to 30-can dryer
No. 5 constant
No. 5 Reeves Drive
No. 5 variable
No. 3 Reeves Drive
No. 3 constant
Jack-shaft to Tommy Dodd or size pad
Jack-shaft to 9-can dryer and water mangle

"PROPORTIONED SPEEDS" are provided for by ingenious application of three Reeves drives, shown diagrammatically at the right.

Continuous BLEACHING RANGE Is Flexible and Efficient

■ A continuous peroxide bleaching range at Startex Mills processes cloth 18 to 64 in. wide and from 1 to 8 yd. per lb. in weight

■ A unique combination of controls and variable-speed drives maintains tension correctly from scutcher to batch roll

STARTEX MILLS, near Spartanburg, S. C., designed their building around a straight-line layout—not a new idea, but a fine example of practical materials-flow design in operation.

Goods received at a loading dock in bales or rolls are batched as they are needed, singed by gas flame, and entered into the range. Approximately 4 hr. later they are back, on batch rolls, ready to be cut into towels, napkins, table cloths, etc.

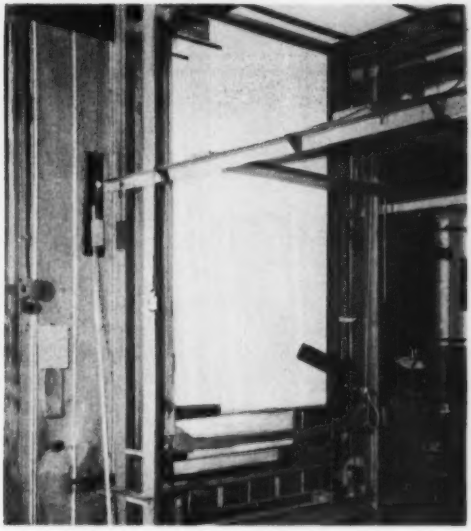
Some of the goods are printed with block prints by a semicontinuous screen-printing method and then returned to the finishing plant for finishing and cutting. These, and other styles of fancy goods with vat-or-napthol-dyed decoration stripes, must receive special treatment during bleaching and finishing. They can be handled, however, without the range being shut down.

Operations are planned so that the finishing range is available for at least 4 hr. on Monday morning after the week-end shutdown to finish goods returned from the printworks while the stringing-up of the bleaching range is taking place.

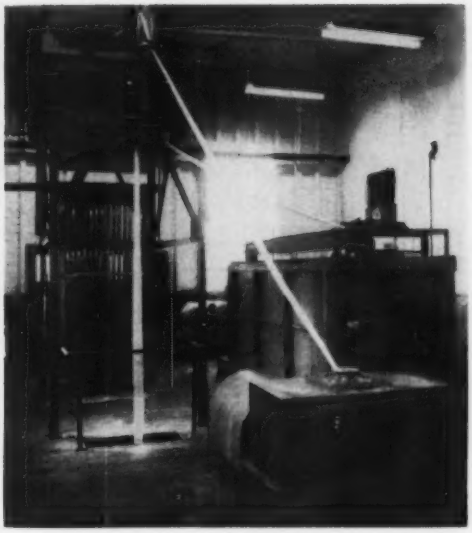
How Goods Are Run

The typical sequence of operations listed here may be varied somewhat for different goods:

1. Singe with a gas-flame singer.
2. Wet out with soda ash and sulfonated oil in the quench box. Squeeze and plait into bins.
3. Wash with hot water in a tight-strand washer; squeeze.
4. Saturate with caustic, 2 to 3%, depending on the weight of goods. Titrate a caustic sample every 15 min. with 0.405 N H_2SO_4 to maintain constant concentration; squeeze. (Note: At this point, if goods have vat-dyed stripes in them, the caustic impregnation is omitted and an extra H_2O_2 treatment is given.)
5. Store in J-box for 1 hr. at 205° F. at 100% saturation. Heater tube using steam at 215° F. preheats the goods.
6. Wash in 24-strand tight-strand washer at 140° F.; squeeze. Repeat wash in another washer; squeeze.
7. Saturate with peroxide (0.75 to 2% of 130-vol. H_2O_2, depending on the weight of goods). Control pH at 10.8 with sodium sil-



MOVEMENT, UP OR DOWN, of the compensating rolls will operate a reversing switch connected to a cord (arrow).



NAPHTHOL-DYED STRIPES stain the white during bleaching. This ceramic saturator and open J-box clean it efficiently.

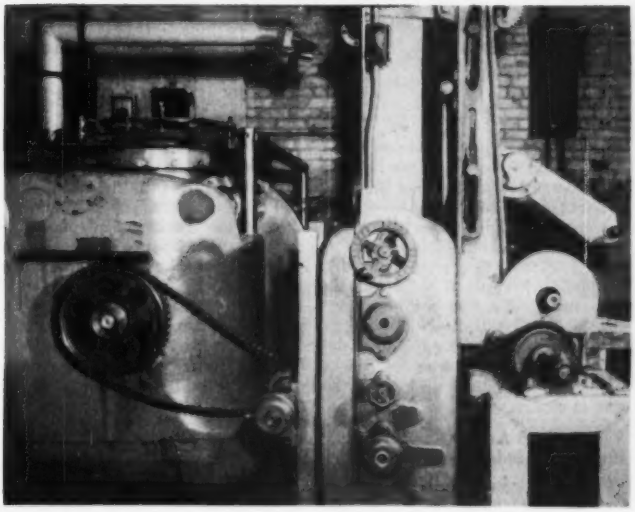
icate. Two-min. cold saturation is sufficient; squeeze.

8. Heat in heater tube with steam at 215° F. Store in J-box for 1 hr. at 205° F. (Caustic-treated goods only—vat-dyed-stripe goods need more time and an additional H_2O_2 treatment.)
9. Wash with warm water in a 24-strand, tight-strand washer; squeeze. Plait into white bins. A Perkins piler is used. (Note: if goods have naphthol-dyed stripes, a cleaning-up operation is needed. It follows.)

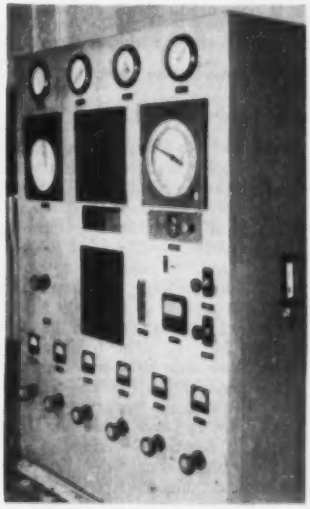
10. After the last warm-water wash, goods with naphthol-dyed stripes enter a chlorine saturator that contains one to three grams per liter of available chlorine, depending on the weight of goods. Then they go to a 30-min. storage in a cold J-box.

11. In a three-compartment washer, goods are washed cold in the first compartment, treated with SO_2 to neutralize the chlorine in the second

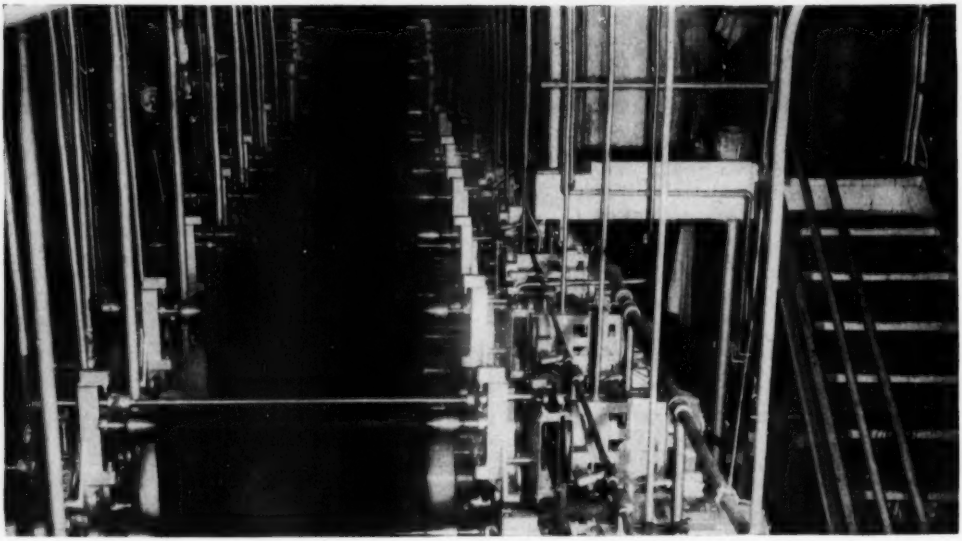
(Continued on page 234)



TENSION CONTROL is maintained by this speed changer between the tenter frame and the batcher.



THREE PANELS control and record operations of the Du Pont continuous bleaching range.



WILLIAMS UNITS in this range show how space can be saved by straightline installation.

North Carolina Finishing Co. Is Dyeing With HOT OIL

- **It pays off in shade uniformity**
- **It pays off in savings on dyes and chemicals**
- **Oil consumption averages 1 gal. per 100 yd. of cloth**

VAT AND SULFUR dyeings are being made on cotton work-clothes fabrics of 1.57 yd. per lb. average weight on a Williams hot-oil range at North Carolina Finishing Co., Salisbury, N. C.

The range is equipped with the newer high-pressure Williams units that are capable of holding 125-lb. steam pressure that maintains the oil at 220 to 240° F. The company has found these units to be more effective and dependable for the high-temperature work than the older units.

Medium to heavy shades are being run with substantial savings in dyes and chemicals over the old method on most combinations of color.

Washfastness and lightfastness are as good as those obtained in dyeing by conventional methods. Crockfastness generally is good, the theory being that fixation is better in the oil-bath method and bronzing cannot occur.

Excessive oil is removed by passing the goods through a series of hot and cold wash boxes containing Igepal CA ex. high conc. Oil is removed by this method fairly easily at the beginning of a run, but results must be constantly checked because it becomes more difficult to remove the oil as the run progresses. The type and weight of fabrics have much to do with the ease of cleaning.

Vat Dyeings Are Padded Unreduced

Vats are pigment-padded and dried in the conventional way, the pad process being followed by a caustic and hydro treatment in the first Williams unit. The fabric is then passed into the hot-oil bath. The excess oil, dye, and chemical residues are removed by a series of hot and cold washings.

Sulfur Dyes Are Reduced

Sulfur dyes are reduced in the first Williams unit by standard procedure and then passed into the hot-oil bath. Following a series of washings to remove the remaining oil, oxidation is accomplished with chrome and acetic acid. A further washing and soaping follows. The goods are finally dried on cans and are ready for the finishing operation.

Sulfur dyes may also be applied by padding reduced color and then passed into the hot-oil bath in the Williams unit.

Pad-Steam System Is Also Used

The company also uses the Du Pont pad-steam method of dyeing as well as the hot-oil process and thus obtains considerable flexibility in dyeing shades on many different types of cloth.

For Good Results With the HOT-OIL Process— General Dyestuff Co. recommends—

- **Use a good oil—low viscosity, low aromatic content, low unsaturation, high flash point, high boiling point**
- **Keep the temperature up—240 to 250° F.**
- **Keep air exposure down—place units close together**
- **Avoid high-pressure steam coil—use the new Williams unit. High local temperature breaks down oils**
- **Keep moisture content of entering goods high enough to maintain the steam-in-oil emulsion level. Don't let goods dry in the oil**

A CONFERENCE WITH General Dyestuff's technical men brought out several important points about the hot-oil process.

The type or brand of oil is not very important so long as the degree of unsaturation is low. Addition of emulsifying agents to the oil is not recommended. Any oil that is stable and nonvolatile, such as Esso Bayol 85, will do a good job.

Removal of the oil from the pores of a water-wet fabric is effected by dispersion of the oil in a cold solution of Igepal CA. Practically all the oil removal takes place in the first cold soaping. The subsequent hot and cold washes simply assure the removal of surplus chemicals, dye, and the fraction of oil that remains after the cold dispersion.

High temperature prevents accumulation of water in the oil bath, promotes an instantaneous vaporization of the water, and assures complete reduction and fixation of the color.

Air exposure of the goods between chemical impregnation and the oil bath results in oxidation and loss of effective reduction potential. For this reason, use of a Williams unit for chemical impregnation is considered better than chemical padding because the exposure can be minimized and a better saturation can be obtained. This observation is particularly true where the cloth is not dried after pigment-padding.

The steam chest in the new high-pressure Williams unit is sufficient to heat oil to temperatures up to 250° F. Any attempt to get higher temperatures in equipment not built for such use by the introduction of high-pressure steam coils (125 to 150 lb.) will result in oil breakdown and smoking.

The importance of moisture retention cannot be overemphasized. The moisture content of the goods entering the oil must be high enough to allow the steam-in-oil emulsion to form and to prevent drying of the cloth in the oil bath. If the cloth dries, oil enters the fabric—and then it is hard, if not impossible, to remove it.

Hydron-Blue Dyeing Procedure

The old standby, Hydron Blue, has been used for years to produce deep navy shades; but by continuous methods, it always gave trouble. A hot-oil method that has given excellent results is:

Padder
- 1 lb. Hydron Blue RG Paste per gal. of pad liquor

Hot-Flue Dryer
- Drying of pigment-padded fabric

First Williams Unit
- Temperature 120° F.
- 2 gal. pad liquor
- 2 oz. dry caustic soda per gal. of total volume
- 4 oz. hydrosulfite per gal. of total volume

Second Williams Unit
- 50 gal. oil at 220 to 230° F.

Third Williams Unit
- Cold (room temperature)
- Initial charge:
  - 3 lb. Igepal CA Ex. High Conc.
- Feed, per 100 gal. of feed liquor:
  - 6 lb. Igepal CA Ex. High Conc.

Fourth Williams Unit
- Initial charge (at 140° F.):
  - 6 lb. bichrome
  - 12 lb. acetic acid, 56%
  - 1½ lb. Igepal CA Ex. High Conc.
- Feed, per 100 gal. feed liquor:
  - 30 lb. bichrome
  - 45 lb. acetic acid, 56%
  - 1½ lb. Igepal CA Ex. High Conc.

Fifth Williams Unit
- Hot wash

Sixth Williams Unit
- Initial charge:
  - 1 lb. Igepal Ca Ex. High Conc.
  - 2 lb. Igepon T Gel
  - 4 lb. soda ash
- Feed, per 150 gal. feed liquor:
  - 2 lb. Igepal Ca Ex. High Conc.
  - 4 lb. Igepon T Gel
  - 8 lb. soda ash

Seventh Williams Unit
- Hot wash

Cloth must be uniformly squeezed before entering the hot oil and carefully guarded from dripping condensation. Such drops will cause resist streaks on the goods.

Here's Another Good Vat Run

A 40,000-yd. run of 1.55-yd.-per-lb. herringbone twill was bleached and mercerized before it was dyed by the following method. Perfect penetration and levelness were obtained. The goods were pigment-padded continuously at 75 yd. per min. on a two-roll pad, seven-tons pressure, at 140° F.

Per gal.
- 1.03 oz. Indanthrene Blue BFP Double Paste
- 1.12 oz. Indanthrene Violet FFBNA Paste
- 1.13 oz. Indanthrene Olive TA Paste

Dry—A & G Hot Flue (Approx. 85%)

First Williams Unit (60 in., 129 gal.) 115° F.
- Start with:
  - 22.50 lb. liquid caustic (56%)
  - 11.25 lb. hydro
  - 3 gal. pad liquor
  - 3 oz. Indanthrene Violet FFBNA Paste
- Then feed as needed:
  - Solution of 6 gal. liquid caustic (56%) in 160 gal. of water Hydro, by dry feeder.

Second Williams Unit (240° F.)
- White oil A (slightly over half full)

First box (cold)
- Start with:
  - 3 lb. Igepal CA Ex.
- Then feed as needed:
  - Solution of 10 lb. Igepal CA Ex. in 150 gal. of water.

Second box (140° F.)
- Start with:
  - 5 lb. chrome
  - 12 lb. acetic acid 56%
  - 1.5 lb. Igepal CA Ex.

(*Continued on page 238*)

How To Do the Best Job With Your PAD-STEAM RANGE

- **Vat colors must be padded evenly, on properly prepared goods, for satisfactory results**
- **Steamers must be uniformly heated—with reproducible conditions from day to day—if you expect top-quality production**
- **Washing must be efficient—and sufficient—if subsequent finishing operations are to be standardized**

By C. NORRIS RABOLD, Consulting Editor, TEXTILE WORLD

Today's techniques and equipment for piece dyeing make it possible to produce large yardages of uniform shade and appearance, at a minimum of cost. Dyeing and finishing of piece goods has therefore become an increasingly competitive operation. Greater demands have been made upon the dyer for uniformity of shade, lower costs, and better appearance.

The application of vat, sulfur, and other types of dyes to piece goods has undergone some remarkable changes in the past 10 to 15 years. In that time, three continuous methods of color application have been developed: the Williams unit, the pad-steam, and the more recent molten-metal process.

Any new process for the continuous application of color to fabric creates a number of new technical problems. Of the three methods mentioned in the second paragraph, each has certain advantages and also certain limitations.

This article is concerned only with the pad-steam process of vat dyeing and proper choice and utilization of equipment.

THE PAD-STEAM METHOD is designed to produce large yardages of dyed goods at high speeds with uniform shading and good fastness. The condition of the cloth when it comes to the dye machine and the mechanical and chemical conditions of the machine itself must be given careful attention to insure optimum results.

You Need These Machines

A modern pad-steam range for applying vat colors would be as follows: a pad for the application of the vat-pigment dispersion, a roller-type dryer or the hot-flue type for drying the vat pigment, and a second pad for impregnation of the goods with the proper reducing agents. This pad would be followed by the steamer itself. After the steamer would be a series of compartment boxes and nips. These should be of sufficient number and size to permit adequate washing of the goods after they leave the steamer. There should be enough wash boxes so that the goods can be oxidized, rinsed, soaped, and washed free of any residual chemicals. Suitable drying should be provided at the end of the wash boxes. Goods leaving the dye range can then be inspected immediately for shade, levelness, and uniformity.

Preferably such a range should have an independent d.c. drive. The pads, dryer, wash boxes, and cans should be driven by individual synchronized motors. The operator can adjust tension, run the goods tight or slack, and allow for stretch throughout such a range.

Here's the System

In the pad-steam system, the color is applied mechanically on the dye pad, dried, and impregnated on a second pad with caustic soda and sodium hydrosulfite before the cloth enters the steam for reduction. Since the immersion time in each pad is a matter of seconds and the cloth during the dye-fixation period is never in a liquid medium, much depends upon the condition of the cloth, the type of pad, and the nature and condition of the pad rolls.

Cloth preparation is of paramount importance in the pad-steam system. This system probably requires better cloth preparation, so far as absorbency and uniformity are concerned, than any other method of vat dyeing. The goods should come to the dye machine as free as possible from non-cellulosic materials. The cloth should wet out rapidly and uniformly. There should also be uniform moisture content. Unless the lot of goods is uniform throughout for absorbency and residual non-cellulosic content, the dyer may expect shading, blotchy dyeing, a toppy appearance, and possibly poor fastness in the piece.

A modern pad-steam dye range is really an assemblage of individual machines. By means of a d.c. drive and individual tension adjustments, it is possible to combine a number of machine units so they will operate together.

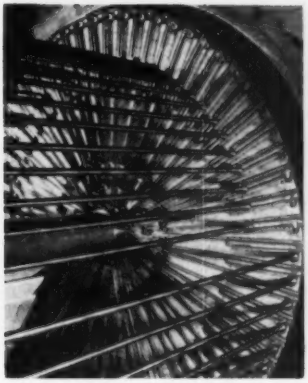
Choose the Best Padder

Probably the most important units in the range are the dye and chemical pads. The system is designed to apply vat colors uniformly by mechanical means to the cloth, reduce the vat color, and reoxidize it. There is no chance to remove pigment color or reduced color from its place on the cloth once it has been fixed there mechanically. In a liquid reduction bath there is an opportunity to level such defects.

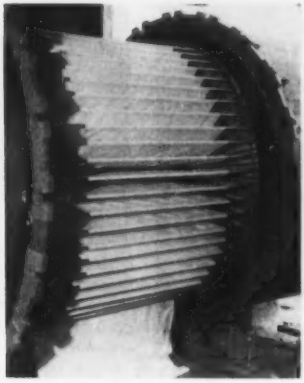
Since the vat pad is the machine that places the color on the cloth, it must be constructed and operated to do a precision job. There are all kinds of dye pads and there are all kinds of ideas as to how such pads should be built. There are about as many ideas on pressures, rolls, and pad boxes as there are dyers.

Pads are either of the two-bowl, single-dip, or three-bowl, double-dip type. The latter is generally preferred for vat-pigment color impregnation. This type pad affords a longer time for cloth immersion in the dye bath, and of course the cloth is given two nips or squeezes. Better leveling and penetration can be obtained than with a two-bowl, single-dip pad. This is particularly important on heavy goods run at

(Continued on page 225)



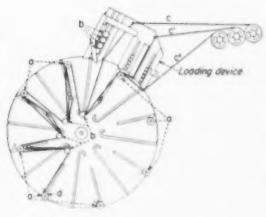
FABRIC IS LOADED on the bars of the rotor, as shown here, before the whole assembly is sealed in the autoclave for the dyeing operation.



IN-AND-OUT MOTION of the carrier bars is caused by turning of the rotor and the action of gravity. All parts of the fabric move continuously.

Newest Idea for Pressure Dyeing—Du Pont's BAROTOR

■ **A new piece-dyeing machine made by Du Pont is said to offer tensionless operation, shorter dyeing time, and ease of sampling—all under pressure**



▶ The operation of the Barotor can best be understood by referring to this sketch of a schematic model built to handle string instead of fabric.

This model represents the cross section of a rotor that has eight sets of supporting bars. The 6-ft. rotor on the semi-commercial machine has eight times as many bars.

There is a set of bars that is retained in odd-shaped slots at the periphery of the rotor heads, *a*. There is another set of bars located at the interior end of J-shaped slots, *b*. The fabric is on the outside of the exterior bars *a* and the inside of the interior bars *b*. In this case, there are three complete wraps, *c*, *c'*, *c''*. The ends of each wrap have been joined together at *d*. All wraps are separated by spacer bars, which are retained in the radial portion of the peripheral slots (the short slots between the J slots).

The rotor is turned by the shaft that passes through the head of the vessel. Gravity does the rest. As each bar reaches a position approximately 60° from the horizontal, it rolls to the interior end of its slot. At the same time, another bar is passing the horizontal and rolls to the exterior end of its slot. The one bar thereby takes up the slack that is let out by the other. In this manner, the fabric is made to progress forward relative to the rotor.

The loading device shown is still in the experimental stage. Actual loading is still done by hand.

E. I. DU PONT DE NEMOURS & CO., INC., Wilmington, Del., has developed a new piece-dyeing pressure machine, called the Barotor, that uses a new principle of goods handling.

All the good features of jig dyeing are said to be present—open-width operation, gentle motion of cloth, absence of rope marks—plus several other desirable features that jigs don't possess.

In the Barotor, the cloth is strung over and under a cage-like structure of bars mounted on a rotor—thus the name. As the rotor turns, the bars move under action of gravity in odd-shaped grooves to give the cloth a constant motion through the dye liquor. The entire rotor assembly is inserted into an autoclave that serves as a dye kettle.

Here's the Hypothetical Ideal

A list has been prepared for the characteristics of an ideal dyeing machine. It should serve at least as a standard for measuring new proposals. The 14 points are as follows:

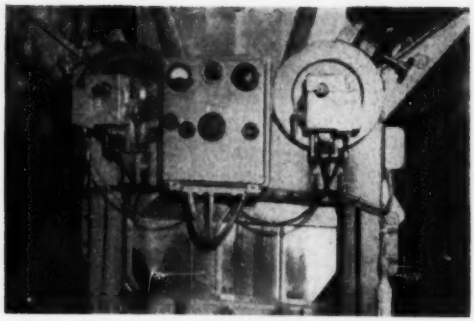
A. **Fabric**—
   1. At open width at all times
   2. Tensionless and wrinkle-free
   3. In uniform, frequent bath contact

B. **Machine**—
   4. Operable with all fabric constructions, both filament and spun
   5. Adaptable to batches from 100 to over 1,000 yd.
   6. Have rapid bath agitation or circulation
   7. Have a wide range of bath ratios
   8. Have no need for attention during dyeing
   9. Afford reproducible conditions between laboratory and dyehouse

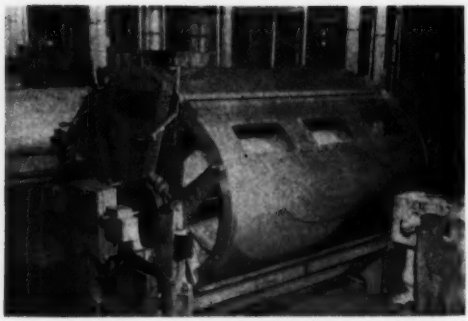
C. **Samples**—
   10. Always representative of entire fabric
   11. Removable at any time without loss of time, pressure, or heat

D. **Economics**—
   12. In utilization of space, by cylindrical construction
   13. In cost of operation and maintenance
   14. With an investment commensurate with productivity, compared to atmospheric dyeing methods

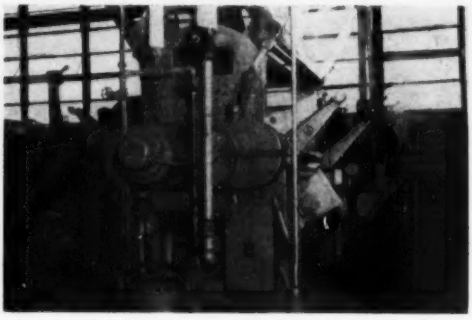
The Barotor promises realization of these 14 listed ideals.



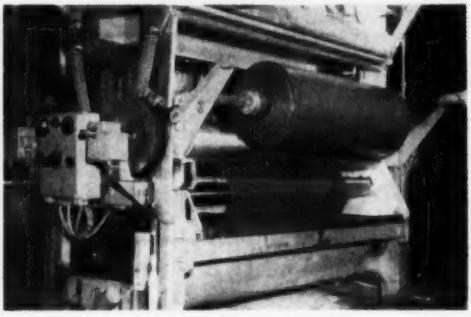
BRAIN OF THE MACHINE is this electronic control box. Nine months of daily operation have proved its dependability.



COUNTERBALANCED, WINDOWED COVERS of stainless steel keep temperature constant and accommodate 31-in. batch rolls.



COVERS OPEN, view from opposite end shows easy loading feature. Low dyebath volume saves dyestuffs, chemicals, and steam.



STAINLESS-STEEL construction is shown in this shot of the unloading operation. Batch roll is kept low and accessible.

Danish JIG Saves Time, Dyes, Chemicals

■ **A fully automatic jig operating in a New Jersey dyehouse saves up to 25% on materials alone. It is equipped with an electronic regulator that—**

- **Reverses up to 23 ends automatically**
- **Maintains tension and regulates deviations automatically**
- **Stops and lights an alarm if anything fails to function properly**
- **Permits one man to run four or five jigs**

A DANISH JIG has been operating in a New Jersey dyehouse for nine months with success and without any trouble. This unit incorporates some new features in jig operation, affords economies in labor and materials consumed, and does work of the highest quality.

Among the features of this jig, made by Vald. Henriksen I/S in Denmark and distributed by Hudson Service & Storage Corp., and Westfelt & Co., Clifton, N. J., are the following:

1. Easily cleaned stainless-steel dyebox equipment
2. Constant speed, electronically controlled
3. Constant tension, wide range of control, self-regulating
4. Extra-gentle starting and automatic reversing that works dependably
5. Automatic stoppage in case of unexpected occurrences
6. Dyebath agitation built in
7. Open-coil and closed-coil steam heating

Several companies that have the new jig in operation claim up to 25% savings in materials consumed. This saving is attributed to the low-volume dye-bath that is constantly in motion and to uniformity of conditions from one end to the next, a factor that prevents shaded or unevenly dyed lots and results in dyestuff, chemical, and time savings.

Machines are built for cloth from 47 to 87 in. width and will handle rolls up to 31 in. in diameter. A 4,000-yd. batch of light nylon sheers has been handled successfully by the machine.

Absence of shading from center to selvage and unevenness from end to end are further facilitated by constant

speed, airtight hood, and standardized temperatures between the bath and the air space under the hood. These are ideal conditions for vat dyeing.

Another advantage of the almost tensionless operation is the practical absence of moiré on light fabrics.

How the Unit Works

At the beginning of operation, the operator sets the desired tension, runs the roll to the end, sets the mechanism for the yardage in process and the number of ends desired, and moves on to another job.

The machine continues to run, automatically reversing itself and adjusting tension. If shrinkage causes too much tension, the machine will stop and a red light will warn the operator. Upon slight adjustment of the control device, the operation resumes.

When it is desirable to run with greaten tension, a 2½-hp. motor allows adjustment to handle the load. A dial regulation is all that is needed.

An ample supply of parts is maintained in this country by the distributors.

New PRINT AGER Speeds Production Over 300%

- **Based on yardage production, floor space needed for the Proctor & Schwartz ager is half that needed for older types**
- **Minimum speed of 90 yd. per min. gives a production rate of 180 yd. when two strands of 50-in. good are run**
- **The printed face of the goods does not contact metal during the critical part of the ageing cycle**

A NEW LOOP AGER for print goods, designed and built by Proctor & Schwartz, Inc., Philadelphia, Pa., is said to be making an excellent production record.

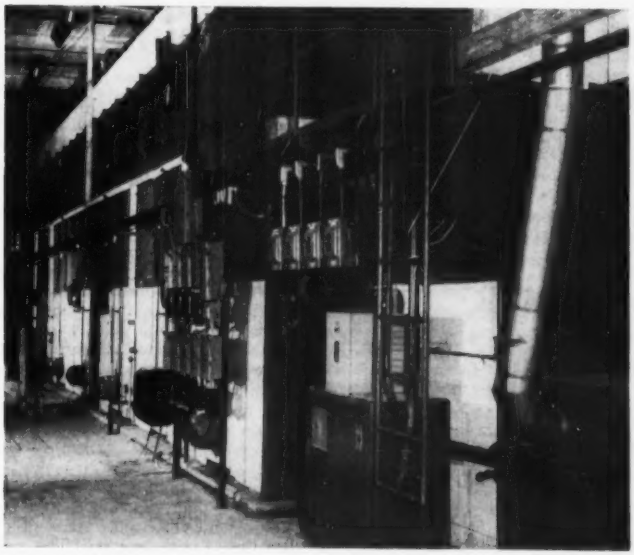
This ager has increased production three to four times per operator, and floor space required has been cut in half per yard of cloth processed. Fabrics processed are of high quality and uniformity.

One mill using the ager estimates the savings in labor alone will amortize the investment in slightly more than 5 yr.

Vat colors on printed fabrics of various types, weights, and constructions can be aged in a steam atmosphere at a minimum rate of 180 yd. per min. when two strands of 50-in.-wide cloth are run at a speed of 90 yd. per min. per strand.

Design permits the use of this ager for a wide range of fabric types.

Uniformity is said to be excellent for the full length and width of the piece; and the danger of water spots, mark-off, and broken selvages common to older agers has been eliminated. During the critical part of the ageing cycle, the printed face of the cloth is not in contact with rolls or supports and is uniformly exposed to steam atmosphere.



CENTRAL CONTROL and one-end operation cut the number of operators needed. New design increases efficiency and speed of output.

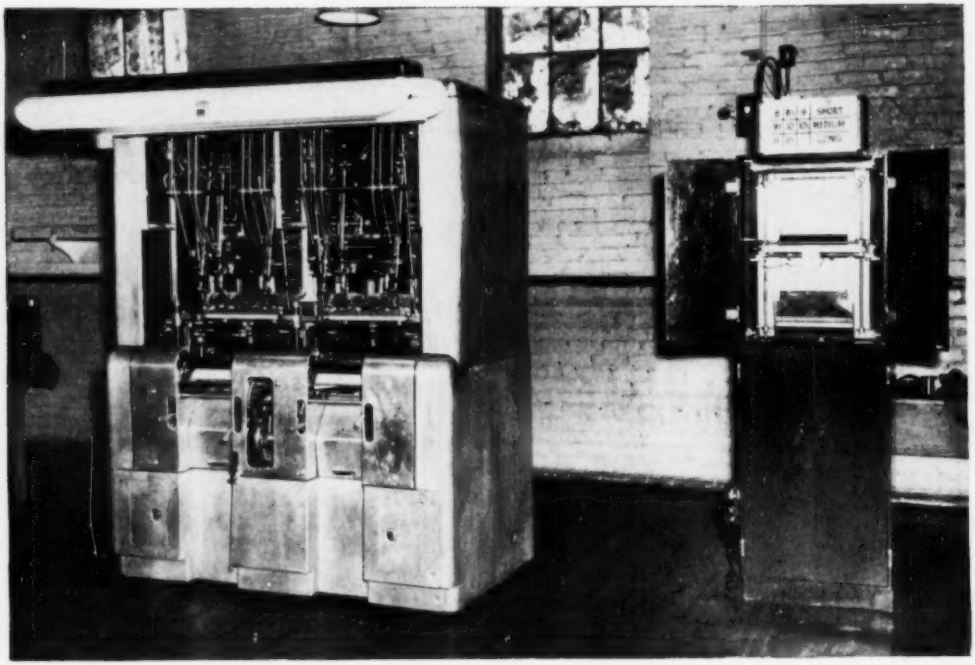
Operation Is Continuous

Material is fed through a vented mouthpiece equipped with steam chests and is formed into loops on a special conveyor by means of draw rolls and a looping mechanism. Ageing takes place in an air-free steam atmosphere only slightly above atmospheric pressure. At the delivery end of the ager, the fabric is withdrawn from the machine through a mouthpiece at the bottom and is returned overhead to the feed end, where it is folded into trucks. The entire operation is thereby centralized at one location.

The ager is constructed as an airtight unit of structural steel and welded steel plates. Stainless steel is used for rolls and other nonstructural parts.

The new ager operates on lower steam consumption than older types. Less leakage of steam occurs because fewer shafts pass through the enclosure, and the length of the mouthpiece by which the cloth enters has been reduced to half that previously required per yard of material processed.

Mechanical maintenance has been greatly reduced over that required by older-type agers. Good accessibility reduces cleaning time.



THE NEW MACHINE, consisting of two experimental knitting heads, is shown at the left, and the control box is at the right. All the controls necessary for a 32-section machine are contained in the two-head model shown here.

TEXTILE EQUIPMENT NEWS FEATURE

New FULL-FASHIONED Machine Knits at 160 Courses a Minute

▶ Machine developed at Chattanooga, Tenn., is said to double present full-fashioned-hosiery production rates. Among features of the new machine are—

- **Electric and electronic control of the knitting cycle**
- **A 10x10-in. pattern sheet and "call" fingers**
- **"Flip-a-switch" adjustment for size and length**

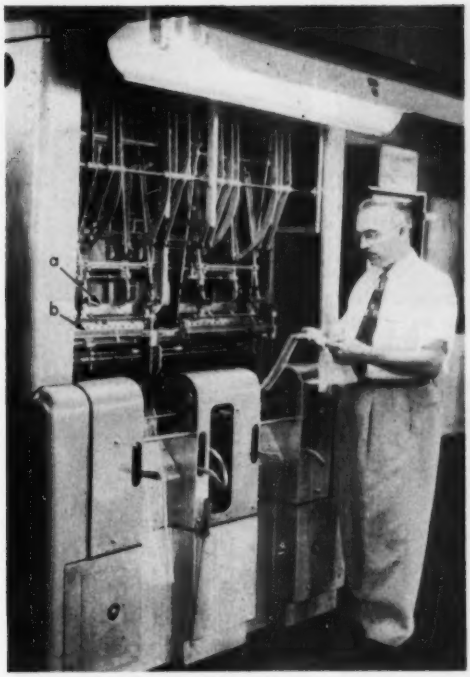
By P. M. THOMAS, Editor, TEXTILE WORLD

A NEW FULL-FASHIONED-HOSIERY machine has been built for Beautiful Bryans, Inc., Chattanooga, Tenn.

Major claims for the performance of the machine are that: (1) it is automatically controlled throughout the knitting cycle by a system of electric and electronic controls, and (2) it knits at approximately twice the speed of machines now on the market.

The first model of the new machine consists of two knitting heads said to knit at about 160 courses a minute, as compared with 80 courses a minute knitted by present production machines. While a standard 32-section machine turns out 14 doz. pairs of hose in 8 hr., this machine in a 32-section size, it is reported, will be capable of producing 28 doz. pairs in 8 hr.

Plans have been completed to have a 32-head production-model machine built, Henry T. Bryan, president of Beautiful Bryans, reports. The production model will be built in four units of eight heads each, with the



15-DEN. 60-GAUGE HOSIERY FABRIC knitted by the machine is inspected by Arthur J. Cobert, who built the machine. Picot bars *a* and automatic welt turners *b* are controlled by the overhead levers and cams.

CONTROL CIRCUITS behind pattern sheet *a* are checked with a polymeter to make certain they work properly. At the upper left are the hand switches used to set the size and length of the stocking. At *b* is the bank of feelers.

units joined so that all 32 heads can be controlled by one control box. This model will be placed alongside present production machines and their performance compared.

How the Controls Work

The control box seen in two of the accompanying pictures can control knitting on any number of machines. The only limitation is that the box can control knitting for only one stocking size and length at a time. In use, it would therefore be necessary to have a control box for each different size-and-length combination being run at one time.

The box at the top of the control unit is designed for setting the controls so that the machine will knit the size and length desired. As can be seen in the photographs, the size can be set by a hand switch for any one-half stocking size from 8 through 11½. Another hand switch sets the control for "short," "medium," or "long" length for whatever size is to be knitted. When the switches are set, the size and length are indicated by lights behind the ground-glass panel on which the size and length are printed.

The knitting cycle is controlled according to a pattern sheet somewhat similar to a jacquard pattern card. The sheet is mounted vertically over a field of electric circuits, insulating the circuits from the bank of 100 feelers shown in the picture. A hole punched in the plastic pattern sheet permits the point of a feeler to drop through and make contact with a particular connection to complete a circuit.

This "call" is transmitted through a series of electronic and electrical connections that include (1) one of 14 electronic tubes in the lower part of the cabinet, (2) a wiring system from the control box to the back of the machine, (3) a switch, and (4) a solenoid that changes the "call" from electrical to mechanical energy through springs, levers, and cams to the knitting elements of the machine.

Design Is Cut in Pattern Sheet

The pattern sheet is 10x10 in. in size. One-tenth-inch graduations horizontally make 100 vertical paths for the 100 feelers. Holes punched in these paths make possible the control of the width of the stocking at any point.

At the left side of the card is a vertical ratchet bar with notches cut every 1/10 in. so that 100 notches are available to control the approximately 2,500 courses in a stocking. The bar that supports the 100 feelers moves up and down this notched bar by means of a pawl that engages the notches. This movement is controlled electrically. At the start of knitting, the feeler bar is at the top. Although the controls may be set so that the pawl will move one tooth on the notched bar with every knitted course, the movement is controlled by holes in the first pattern line so that the feeler bar lowers only as it needs to in order to change the knitting pattern.

At the end of a stocking, the feeler bar is automatically returned to the top of the pattern so that knitting can resume.

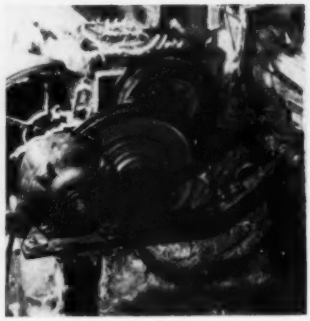
The machine is equipped with an automatic welt turner and an Alemite Oil-Mist automatic lubricating system.

1 THE ANTIFRICTION BEARING is placed in the thrust-bearing collar.

2 THE COLLAR is pushed on the crankshaft.

3 THE FRICTION LEVER is fastened to the shipper motion.

4 THE CRANKSHAFT - END - SUPPORT BEARING is bolted to the end-support stand.



5 COMPLETED. The parts cost $14.67 for a left-hand loom and $13.42 for a right-hand loom.

6 JUST 30 MIN. after the loom was stopped, the loomfixer starts the loom. The labor cost — one loomfixer for a half hour.

We Make a Little LOOM MOTOR Do a Big Job

▶**"The little things certainly do count in a weave room," says the superintendent of a large sheeting mill. "We called in a machine company to work out a small problem on our looms, and they came up with the answer to an associated problem that saved us thousands of dollars. Here's the whole story—"**

L-MODEL LOOMS are hard on motor driving parts, especially when you're running 90-in. sheeting of such constructions as 68x72, 88x90, and 64x64. Wear on shipper parts is heavy, and there's no way to adjust the clutch on the old-type thrust drive. The only possible adjustment is to loosen the crankshaft-end-support bearing and move it toward the motor gear. Even then, the bearing often slips back.

Since the fiber washer at the thrust collar wears rapidly, frequent adjustment of the drive is necessary. To get around loosening the bearing, our loomfixers fell into the habit of knocking the bearing toward the washer while the bearing bolts were tight. As a result of this practice, many of the bearings were cracked and fell off the loom after they had run for a short time.

Fiber washers, too, had to be replaced frequently; and much production was lost when the washers were replaced. Along with the time lost in getting to a flagged loom, it wasn't uncommon to lose 1¼ hr. of production when a fiber washer was replaced.

The engineering services and drive parts were furnished by Hunt Loom & Machine Works, Inc., Greenville, S. C.

We're Happy With Our New Setup

To get away from the trouble that we were having, we replaced six driving parts with new parts that totaled only four. The new parts have completely erased our problem.

(Continued on page 198)

A New All-Fiber System

Fabric engineering—as designing is now widely called—gets more and more complicated as the range of available fibers increases. Yarn diameter and density, the bases for designing cloth, vary with every fiber.

Just as drafting systems are tending toward a universal or all-fiber system, so is the science of designing fabrics.

In this article, and in others to follow, an authority on fabric engineering sets forth the principles and uses of a new all-fiber system of yarn diameters and densities that can be used for old and new fibers, from wool to X-51.

All-Fiber System Meets Needs of FABRIC ENGINEERING

- Yarn diameters are of fundamental importance in the structure of woven fabrics.
- Frederick Peirce, in his studies of the geometry of cloth structure, used the sum of the diameters of the warp and filling yarns as the unit of length. But Peirce dealt only with cotton yarns and fabrics.
- We now have a lot of new fibers, and Peirce's fundamental work has to be extended to handle fibers other than cotton. All textile formulas that directly or indirectly involve yarn diameters, such as twist multipliers of yarns and cover factors of fabrics, are thus modified by new views on yarn diameters.
- For example, it may be expected that a nylon yarn of fiber density 1.14 will have a larger diameter than a cotton yarn of fiber density 1.50 under the same conditions.
- Considerations such as these have led to the introduction of the "all-fiber" system for yarn diameters, twist multipliers, and cover factors. The all-fiber system takes into account fiber density, which heretofore has been disregarded.

By **J. B. DICKSON**, Textile Div., U. S. Rubber Co.

EVERY FABRIC DESIGNER knows from sad experience that it is not possible to design for all properties with equal assurance. Tensile strength can be designed for with a good degree of certainty; but if management or the sales department asks for the same hand in an acrylic fabric as in a woolen fabric, for example, the technologist is confronted with the fact that hand has not been reduced to measurable physical properties.

The design problems to be discussed here are those that have arisen in everyday work in a mill. The solutions given afford practical methods, tested over several years' application, for handling practical problems.

Formulas Used in Practical Designing

Experience shows that complicated mathematics, however exact, are not as a rule employed in practical design. Practical design has been based on the premise that a formula that is a first approximation to exactness and is simple enough to insure that it will

Table I -- YARN DIAMETERS

		COTTON		WOOL		DYNEL		NYLON		DACRON	
Fiber density D		1.50		1.32		1.28		1.14		1.38	
$\sqrt{D}$		1.225		1.149		1,131		1.068		1.175	
Dia. factor		0.0358		0.0381		0.0381		0.0410		0.0373	
Cotton Yarn No. (N)	$\frac{1}{\sqrt{N}}$	Dia. (d) inches	n* = 1/d number	Dia. (d) inches	n* = 1/d number	Dia. (d) inches	n* = 1/d number	Dia. (d) inches	n* = 1/d number	Dia. (d) inches	n* = 1/d number
1	1.0000	0.0358	27.9	0.0381	26.2	0.0387	25.8	0.0410	24.4	0.0373	26.8
1.5	0.8165	0.0292	34.2	0.0311	32.2	0.0316	31.6	0.0335	29.9	0.0304	32.9
2	0.7071	0.0253	39.5	0.0270	37.0	0.0274	36.5	0.0290	34.5	0.0214	37.9
2.5	0.6325	0.0226	44.2	0.0241	41.5	0.0245	40.8	0.0259	38.6	0.0236	42.4
3	0.5774	0.0207	48.3	0.0220	45.5	0.0224	44.6	0.0237	42.2	0.0215	46.5
3.5	0.5345	0.0191	52.4	0.0204	49.0	0.0207	48.3	0.0219	45.7	0.0199	50.3
4	0.5000	0.0179	55.9	0.0191	52.4	0.0194	51.5	0.0205	48.8	0.0186	53.8
4.5	0.4714	0.0169	59.2	0.0180	55.6	0.0182	54.9	0.0193	51.8	0.0176	56.8
5	0.4472	0.0160	62.5	0.0170	58.8	0.0173	57.8	0.0183	54.6	0.0167	59.9
6	0.4082	0.0146	68.5	0.0156	64.1	0.0158	63.3	0.0167	59.9	0.0152	65.8
7	0.3780	0.0135	74.1	0.0144	69.4	0.0146	68.5	0.0155	64.5	0.0141	70.9
8	0.3536	0.0127	78.7	0.0135	74.1	0.0137	73.0	0.0145	69.0	0.0132	75.8
9	0.3333	0.0119	84.0	0.0127	78.7	0.0129	77.5	0.0137	73.0	0.0124	80.6
10	0.3162	0.0113	88.5	0.0121	82 6	0.0122	82.0	0.0130	76.9	0.0118	84.7
11	0.3015	0.0108	92.6	0.0115	87 0	0.0117	85.5	0.0124	80.6	0.0112	89.3
12	0.2887	0.0103	97.1	0.0110	90.9	0.0112	89.3	0.0118	84.7	0.0108	92.6
13	0.2774	0.00992	101.0	0.0106	94.3	0.0107	93.5	0.0114	87.7	0.0103	97.1
14	0.2673	0.00956	104.6	0.0102	98.0	0.0103	97.1	0.0110	90.9	0.00996	100.4
15	0.2582	0.00924	108.2	0.00984	101.6	0.00999	100.1	0.0106	94.3	0.00963	103.8
16	0.2500	0.00895	111.7	0.00953	104.9	0.00968	103.3	0.0103	97.1	0.00932	107.3
17	0.2425	0.00868	115.2	0.00924	108.2	0.00939	106.5	0.00995	00.5	0.00904	110.6
18	0.2357	0.00844	118.5	0.00898	111.4	0.00912	109.6	0.00967	03.4	0.00879	113.8
19	0.2294	0.00821	121.8	0.00874	114.4	0.00888	112.6	0.00941	106.3	0.00856	116.8
20	0.2236	0.00800	125.0	0.00852	117.4	0.00866	115.5	0.00917	109.1	0.00834	119.9
21	0.2182	0.00781	128.0	0.00832	120.2	0.00845	118,3	0.00895	111.7	0.00814	122.9
22	0.2132	0.00763	131.1	0.00813	123.0	0.00825	121.2	0.00875	114.3	0.00795	125.8
23	0.2085	0.00746	134.0	0.00795	125.8	0.00807	123.9	0.00855	117.0	0.00777	128.7
24	0.2041	0.00731	136.8	0.00778	128.5	0.00790	126.6	0.00837	119.5	0.00761	131.4
25	0.2000	0.00716	139.7	0.00762	131.2	0.00774	129.2	0.00820	122.0	0.00746	134.0
26	0.1961	0.00702	142.5	0.00747	133.9	0.00579	131.8	0.00804	124.4	0.00731	136.8
27	0.1925	0.00689	145.1	0.00733	136.4	0.00745	134.2	0.00789	126.7	0.00718	139.3
28	0.1890	0.00677	147.7	0.00720	138.9	0.00732	136.6	0.00775	129.0	0.00705	141.8
29	0.1857	0.00665	150.4	0.00708	141.2	0.00719	139.1	0.00762	131.2	0.00693	144.3
30	0.1826	0.00654	152.9	0.00696	143.7	0.00707	141.4	0.00749	133.5	0.00681	146.8
32	0.1768	0.00633	158.0	0.00674	148.4	0.00684	146.2	0.00725	137.9	0.00659	151.7
36	0.1667	0.00597	167.5	0.00635	157.5	0.00645	155.0	0.00684	146.2	0.00621	161.0

Conventional yarn-diameter factor, $k_d = \frac{0.0438}{\sqrt{\text{fiber density (D)}}}$

d = yarn diameter n* = compact number of yarns per inch N = yarn number used in computing this table

Table II -- FIBER DENSITIES AND CONVENTIONAL DIAMETER FACTORS
(Fiber density in grams per cubic centimeter. Size in cotton yarn number.)

Kind of fiber	Fiber density (g./c.c.)	Square-root density	Reciprocal of square root	Yarn-dia. factor $(0.0438\sqrt{D})$	Compact-cover factor $(1/kd)$
	D	D	$1/\sqrt{D}$	kd	K*
All-fiber	1.00	1.000	1.000	0.0423	22.8
Acetate	1.33	1.153	0.867	0.0380	26.3
Acrilan	1.13	1.065	0.939	0.0411	24.3
Cotton	1.50	1.225	0.816	0.0358	28.0
Dacron, staple and filament	1.38	1.175	0.851	0.0373	26.8
Dynel	1.28	1.131	0.884	0.0387	25.8
Flax	1.50	1.225	0.816	0.0357	28.0
Glass	1.56	1.600	0.625	0.0274	36.5
Jute, hemp	2.49	1.221	0.819	0.0359	27.9
Nylon, staple and filament	1.14	1.068	0.936	0.0410	24.4
Orlon, staple	1.14	1.068	0.936	0.0410	24.4
filament	1.17	1.082	0.924	0.0405	24.7
Ramie	1.51	1.229	0.814	0.0356	28.1
Saran	1.69	1.300	0.769	0.0337	29.7
Silk, boiled off	1.25	1.118	0.894	0.0392	25.5
Vicara	1.25	1.118	0.894	0.0392	25.5
Viscose and other cellulose fibers: cuprammonium, saponified acetate, etc.	1.52	1.233	0.811	0.0355	28.2
X-51 acrylic fiber, staple and filament	1.17	1.082	0.924	0.0405	24.7
Wool, mohair, camelhair, etc.	1.32	1.149	0.870	0.0381	26.2

be used is more valuable to the designer than involved mathematics.

For that reason, the following discussion involves in general only the first approximations in design. These approximations do not include known refinements but rather are the ABC's of the subject. In most cases they offer solutions that are good enough for practical purposes. But the limitation on their application is pointed out in case some reader may unknowingly have a difficult problem and be disappointed in his results.

The word "design" in textiles is used in a number of ways. In this discussion and those to follow the term connotes "functional design." As such, it must be sharply distinguished from (a) design for styling and (b) design for weaving.

Calculating Yarn Diameters

Only conventional yarn diameters and dependent formulas are treated in this discussion. Conventional diameters are not, except by chance, identical with optical diameters measured with a microscope; nor are they the same as the effective diameters of yarns as the yarns lie in a fabric where interlacing with other yarns may result in flattening at the interlacings. There are, of course, design problems that require a more exact knowledge of yarn diameters than is afforded by conventional diameters, but we shall not consider them here except for the purpose of distinction.

The relation between conventional and optical diameters may be illustrated by published measurements on Memphis-cotton singles yarn. The conventional diameter factor (i.e. the diameter the yarn would have had if the cotton yarn number had been 1) is 0.0358. At a twist multiplier as usually computed, the diameter at 3.0 is 0.0483, at 6.1 is 0.0358, and at 9.0 is 0.0326. Only at a twist multiplier of 6.1 does the optical diameter agree with the conventional. At lower twists, the diameter is larger; and at higher twists, it is smaller.

When yarns flatten in a fabric there are two diameter factors. One is the "thin diameter" and the other is the "spread diameter." The thin-diameter factor is used in design for thickness (gauge) of woven fabrics, and the spread-diameter factor is used for design involving air-impermeability.

Three Kinds of Diameter Factors

A comparison of the three kinds of diameter factors may make the situation clearer. To obtain the following data, optical diameters were measured with a microscope; the effective diameter factors were computed for the same cotton ply yarns from data on cotton ducks. The figures are for the diameter perpendicular to the fabric, since the data were originally computed in connection with a problem involving thickness (gauge) of fabric.

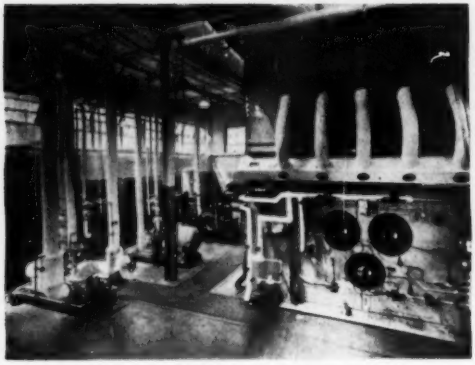
Cotton yarn	Conventional diameter factor	Optical diameter factor	Effective diameter factor for thickness
6.75/3	0.0358	0.0441	0.0256
6.75/7	0.0358	0.0396	0.0280
7.45/5	0.0358	0.0516	0.0210

In each case, the conventional diameter factor is between the optical and the effective diameters, which fact may explain why conventional diameter is as satisfactory to use as it proves to be in practical use.

(*Continued on page* 243)

Acknowledgments

The writer is indebted to the Textile Div., U. S. Rubber Co., for permission to publish this article, to E. A. McMaster, head of the testing laboratory of the division's Development Dept., and to Miss Lola Jennings for the experimental work on diameters of different kinds of filament yarns.



THE TURBINE GENERATORS are close to the boiler-control panel at the left. The new switchgear is in the rear.

THE OIL-FIRED BOILERS operate at 230 lb., 500° F. The pump bay is to the left of the No. 1 boiler.

New POWER PLANT *Serves Two Woolen Mills*

▶ A. D. Ellis Mills, Monson, Mass., saved money by building a new steam-and-power plant to serve two mills ⅛ mi. apart. Besides labor and handling costs saved by the use of oil as a fuel, proper selection of boilers and generators gives—

- **Heat balance**
- **Constant voltage**
- **Economical operation**

By LEONARD RAMIREZ, Design Engineer, Alonzo B. Reed, Inc.

THE NEW POWER PLANT of A. D. Ellis Mills, Inc., Monson, Mass., manufacturers of high-grade woolen fabrics, was built as the result of a plan to consolidate two mills, Mill No. 1 and Mill No. 3, so that operating and overhead costs would be reduced. The plan calls for Mill No. 1 to be used mostly for preparatory operations, and Mill No. 3 for most of the manufacturing operations. All steam and power for both mills is now generated by this new plant located next to Mill No. 3, 2,000 ft. from Mill No. 1.

The average power output from the new station is about 15,000 kwh. per day. Practically all power is generated as a by-product from steam required by the woolen-manufacturing processes. There has been a marked increase in mill production as a result of constant voltage and frequency and the excellent governing characteristics of the turbines. Swings in process-steam loads are handled readily by the new boilers and process-water system.

Hand-firing the old boilers at each plant resulted in high transportation, labor, and ash-handling costs. The new boilers are oil-fired, and now these costs are greatly reduced or eliminated.

Old Equipment

Mill No. 1 operated with three 167-bhp. horizontal-return tubular boilers generating steam at 140 psi.-ga., and the drying was done at this pressure. The process water and buildings were heated with reduced-pressure steam. All power for this plant was purchased.

Mill No. 3 operated with three 167-bhp. boilers at 140 psi.-ga. The power-generating equipment consisted of two 200-kw., 5-lb. back-pressure turbines and one 220-kw. diesel generator. The original idea was to generate power with the back-pressure turbines until low-pressure steam demands were met and then to supplement energy with both the diesel unit and purchased power.

Steam Supply

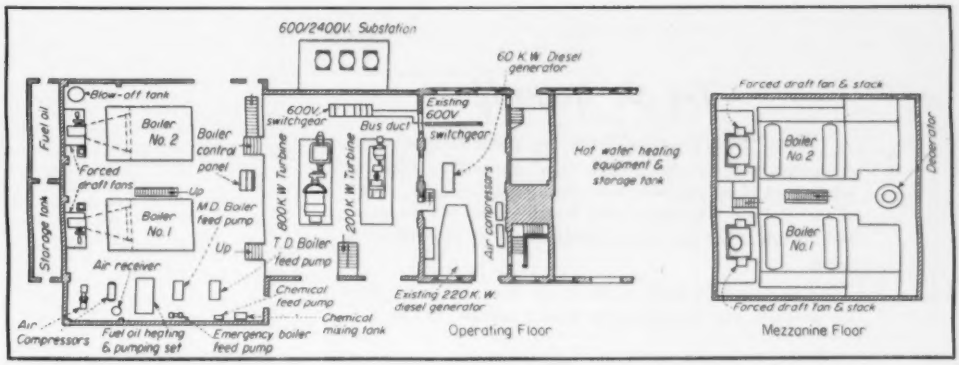
Steam at 85 lb. pressure is supplied to Mill No. 1 by a steam-transmission line. All clean condensate that can be reclaimed is returned to the feed-water heater in the new power plant.

Hot-water storage tanks allow water to be heated continuously to take care of the heavy surges and peak steam loads (43,000 lb. per hr.).

Two reducing stations supplement the steam supply to the 100-lb. and 7-lb. systems. One station reduces steam from 230 lb., 500° F. to 100 lb., 350° F.; the other reduces pressure from 100 to 7 lb.

Boiler Room

The new plant has two low-head, three-drum boilers with completely water-walled furnaces. The boilers are equipped with interdeck-type



THE NEW TURBINE ROOM is adjacent to the old turbine room. A 15-ft. duct makes the old and new switchgear a duplex system to serve the two plants.

superheaters. They are designed for a maximum working pressure of 250 lb. and operate at 230 lb., 500° at the superheater outlet. The maximum continuous rating of each boiler is 35,000 lb. per hr.

Each boiler is fired with Bunker C oil by three mechanical, steam-assisted burners. The boilers are designed to accommodate spreader stokers and coal-handling equipment if it should become necessary to change fuels.

Forced draft is provided by double-width, double-inlet fans. Air is taken from the boiler room and passed through tile ducts below the furnace floor. The air thus cools the floor and preheats air for the burners. Induced-draft fans and venturi stacks are arranged so that dust collectors may be installed if the furnaces are converted to coal.

A jet-type deaerating feed-water heater is used. This heater is operated by exhaust steam from the turbine-driven boiler-feed pump and by the extracted steam from the condensing turbine. Feed water is supplied to the boilers at a temperature of approximately 230° F.

Two four-stage centrifugal boiler-feed pumps are used. One pump is motor driven; the other is driven by a steam turbine, which exhausts into the 7-lb. low-pressure system. A 6x4x6 duplex reciprocating steam pump takes care of the small steam loads during week ends and holidays.

Feed-water regulators keep water at a constant level in each boiler.

An automatic combustion control proportions air and fuel to the furnaces and keeps steam pressure constant. This control also maintains an equal load on each boiler when both boilers are in operation.

Each boiler is supplied with a meter that indicates and records the steam and air flow and the flue-gas exit temperature.

The meters, combustion-control equipment, draft gauges, start-and-stop buttons for motor-driven auxiliaries, and clock are mounted on one panel board located in front of the boilers.

Each oil burner is furnished with a flame-failure detector to shut off oil supply to the burners.

Turbine Room

One 800-kw., 7-psi.-ga. and one 200-kw., 100-psi.-ga. turbine generator are used. The 800-kw. turbine generator is of the condensing-extracting type and is fitted with a surface condenser and air ejector. The generator is self-ventilated. The temperature of the ventilating air is controlled by a water-coil heat exchanger. The exciter is direct-connected, and all elements of the unit are mounted on one base.

The condenser has divided water boxes; filtered water is passed through one section of tubes, and raw or unfiltered water is passed through the other section. The filtered water is tempered by being circulated through the hottest section of tubes before it is delivered to a process-water heater; thus, heat recovery from the condenser is utilized. The piping to the upper section of the condenser is arranged so that either filtered or raw water may be used.

All raw water from the condenser flows to a hot well provided with an overflow to the sewer. A vertical pump is installed in this well to transfer partially heated raw circulating water to the mill process-water filter beds.

(*Continued on page 250*)

These Factors Governed Power-Plant Design

Steam Requirements

Hourly Requirements	
Summer average	29,000 (lb.)
Winter average	39,000
Winter peak	43,000
Process Pressures	
Carbonizing, drying, steaming, and pressing	80 to 90 (psi.-ga.)
Boiler-feed heating	5 to 7
Building heating	2 to 3
Process-water heating	2

Mill-Pond Temperatures

Summer average	75° F.
Winter average	35° F.

Power Characteristics and Loads

Motors	550 v., 60 cycle, three phase
Lighting	115 v., 60 cycle, single phase
Daily consumption	15,000 kwh.
Maximum demand	900 kw.
Average hourly load	750 kw.

Try It Yourself

What you see around every day often becomes commonplace, and you don't really "see" any more. Pick any job in your plant and write a detailed job description. Ways of saving time and money will literally jump off the paper and hit you in the face if you question and try to justify each detail.

The principles given in the study of worsted-card-grinding practices can be applied to almost any job in the mill.

Worsted Mill Analyzes CARD-GRINDING Methods

▶ A large New England worsted mill decided that something should be done about card grinding. The mill attacked the problem with this formula:

1. **Describe all parts of the job**
2. **Question every detail**
3. **Suggest improvements**

Some of the suggested improvements required no major decisions and were made immediately. Improvements that called for money to be spent were analyzed carefully and made if a 5-yr. payoff could be shown.

By MICHAEL J. KOROSKYS
Assistant Professor, Wool Department, Lowell Textile Institute

ALL THE STEPS SUGGESTED here to correct poor methods may appear obvious to you, but these improvements were made in a mill that is considered progressive and efficient. The "obvious" errors in method didn't show up until the details were written on paper.

In the example, the job description is shown in conventional type; the parts in italics show the improvements suggested after all the detailed descriptions had been made.

Background

A three-man team does the grinding at this mill. One clother and two grinders dismantle the card, do the grinding, repair the clothing, and reassemble the card.

All the cards in this example are two-cylinder metallic worsted cards.

The card clother is responsible for the accuracy and quality of the work.

The group works on the first shift, from 6:00 a.m. to 2:00 p.m. In preparation for the grinding, the card operator on the third shift removes the feeder belt and allows the card to run out so that it can be stripped. Promptly at 6:00 a.m. the stripping crew arrives and strips the three workers on the breaker cylinder, the three workers on the finished cylinder, and the two angle strippers.

The card is then ready for the grinding team.

Preparations for Removal of Workers and Angle Strippers

Clother brings tool truck to the vicinity of the card, gets the necessary tools, and:
- Removes brush on main drive belt by removing one bolt
- Removes main-drive-belt shipper by removing one nut
- Removes main-drive belt by removing splicing hook
- Rolls up drive belt and places on floor at card
- Numbers workers W3, W4, W5, W6, W7, W8, and angle strippers A1 and A2 with chalk for identification

Items 1 through 4 could be eliminated by having motor drives.

Grinders meanwhile:
- Remove one pulley from each of two angle strippers
- Loosen collars on each end of workers and angle strippers (16 collars)
- Move loose belts away from workers and angle strippers
- Clother and grinders perform the above operations independently.

Move Baller Head

This operation is performed chiefly by grinders, sometimes assisted by the clother.

In normal operation there is one baller head for every three cards. When one card is stopped, single ends are made on

the other two. Therefore a spare baller is placed at the card that does not already have one. This operation requires moving the calender rolls, putting the baller into position, and removing the face plate at the end of the baller so that a gear driving the baller rolls can be fastened to its shaft. The card has to be stopped while all this work is being done.

Also, normally, the center card of any three cards uses a smaller gear to drive the calender rolls than the gear on the outer two cards. After grinding every third card, therefore, two baller heads are moved in order to have correct gearing. Example:

Card 1 and Card 3 have calender rolls with a 29-tooth gear and Card 2 has a baller head with a 26-tooth gear. (The gear on the baller head is in the same location as when only the calender roll is used, but the gear and calender rolls are an integral part of the baller head.)

When Card 1 is ground, the calender rolls on Card 3 are removed and a spare baller head is moved into position. Single ends are run on Cards 2 and 3.

When Card 3 is ground, the calender rolls at Card 1 are removed and the baller head at Card 2 is moved to Card 1. Card 3 remains untouched. Cards 1 and 3 run single ends.

When Card 3 is ground, the spare baller head is moved from Card 3 to Card 2, and Cards 1 and 2 run single ends.

To return the cards to normal operation, the spare baller is removed from Card 2 because it has a 29-tooth gear instead of the required 26-tooth gear. The baller head at Card 1 is returned to Card 2. Calender rolls are returned to their position on Cards 1 and 3. All ends are run into Card 2 baller head.

Note: For every three cards ground, four baller heads are moved.

If sufficient baller heads were on hand, a substantial amount of time could be saved. The cost of the extra ballers would easily be absorbed in the additional production because there would be less downtime and fewer manhours.

Remove Workers and Angle Strippers

This operation is performed by grinders only.

Workers on the breast cylinder are not removed.

Push empty roll trucks from grinding area to the card. With special pipes, lift workers W6, W7, W8, and angle stripper A2 from the card and set them in the truck. (The highest point to be cleared is 6 ft. 8 in. from the floor.)

Push loaded truck to the grinder and another empty truck to the feed end of card via the center alley or the end alley.

Locate two platforms and place in position beside the feed hopper to give shorter men additional height while removing the remaining workers, W3, W4, W5, and angle stripper A1.

Place the workers and angle strippers on the truck and push the truck to the floor grinder.

In Section 1, posts are located so that all rolls can be removed from doffer end.

An overhead monorail solved the problem of locating platforms and trucks, which are always some place other than where they are needed.

Move Angle-Stripper Bearing Boxes

This operation is performed only by the clother.

The angle-stripper bearings are used to hold the brushes. There are four bearings, two at each cylinder.

Because the brush has longer wire than the angle stripper, it is necessary to remove the entire bearing in the case of the finisher cylinder, remount it, and reset it. Removal requires the removing of three bolts and nuts, and the setting requires the adjustment of two lock nuts and two setscrews per bearing.

On the breaker cylinder, the bearings are not moved but a large adjustment is necessary.

This changing of settings was eliminated by correlating the brush, bearing, and angle-stripper size.

Preparation of Card for Brushing

This operation is performed by grinders before the brushes are inserted.

Move belts clear of pulleys.

Remove strippers S5 and S8 from their bearings and set into worker bearings W5 and W8 to make a greater area for applying the cleaning solution.

Move stripper S3 to W3 or W2 on the breast cylinder from its bearings to a position near top divider to allow the brush to pass into position.

Raise ends of strippers S3, S4, S5, S6, S7, S8, and put waste in bearings to raise the rolls from the cylinder when brushing.

Remove sleeves from angle strippers and place on brush shaft.

An overhead monorail would remove all interfering rolls more quickly and safely.

Put Brushes Into Position

The grinders perform this operation.

Push the truck containing two brushes from the grinder area to the card (usually the feed end) and lift the brushes (with pipes) from the truck into position. Return the empty truck to the grinding area.

Set Brushes

Clother sets brushes to the cylinder with a 28 gauge. Brushes are set to brushing position after the card is started.

Use of a monorail is again indicated.

Obtain Cleaning Solution

The clother performs this operation and uses a solution of half kerosene, half carbon tetrachloride.

Take empty 3-gal. pail from the last card ground, walk to laboratory in 4th floor building, and obtain from laboratory employee 1½ gal. of carbon tetrachloride.

Walk to mill supply on first floor and obtain 1½ gal. kerosene in the same pail. Return to the card. Use elevator between floors.

A terrific loss of time in obtaining solution. Keep it on hand in a truck.

Apply Cleaning Solution to Main Cylinders

The clother and the grinders do this job.

Clother sets pail on a leather pad placed on the cylinder to prevent damage to wire, climbs onto the frame of the card, sprinkles the solution onto the cylinder with a hand brush, and brushes it on.

One or both of the grinders turn the cylinder for him.

Only about half of the cylinder can be reached from the frame, so when the cylinder has been entirely covered on one side, the clother walks around the card to the other side and repeats the operation.

The other cylinder is done in the same manner.

Spraying the solution saves time and solution and applies the solution more evenly.

Preparation of Card for Brushing

This operation is performed by the grinders (except where the clother is specifically mentioned) and is done after the brushes are inserted.

One pulley from stripper 5 and one from stripper 8 is removed and fastened to brush 1 and brush 2 respectively.

Have pulley attached to brushes permanently and eliminate changing all the time.

Move cylinder pulleys to align with pulleys on brushes.

Return breast worker W2 or stripper S3 to correct position.

Put on belt from cylinder pulleys to brush pulleys.

Put on side belt to drive between the two main cylinders.

Put on main drive belt with twist in it to run main cylinders in a direction opposite to normal. This job requires obtaining a ladder from nearby. One grinder holds the ladder while the other climbs and puts the belt on the shaft pulley at the ceiling. The clother then hooks the ends of the belt together and puts the belt onto the idler pulley.

A grinder returns the ladder.

A motor drive with a reversing switch would eliminate the above elements.

Start Card and Check Running

The clother does this job.

Start the card. A leather palm is used to move the belt because the shipper has been removed. Set the brush to the cylinder so that it meshes with the cylinder wire. (The brush is set by ear; the deeper the mesh the lower the pitch of the sound.) Adjustment is made first on one side and then the other until the clother is satisfied with the setting.

During the brushing operation, the clother checks the setting periodically.

If brush and angle-stripper size were in the proper ratio, the brush would automatically be in deep enough without fussing around, since it sits in the angle-stripper bearings and the angle stripper is set to the cylinder.

GRINDING

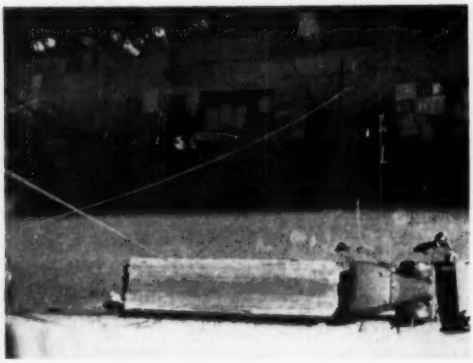
Place Workers and Angle Strippers Into Grinder

This operation is performed by the grinders.

Push trucks parallel to and beside the floor grinder. Both men lift the rolls from the truck and place them in a rack of the grinder so that the rolls will be nearly against grinding wheel. Tighten

(Continued on page 204)

From Here . . . Nine Stories Up . . .



113 Ft. Down . . . To West 20th St. . . .

Out the Window . . .

Over the Street . . .

Saved—50 Days' Production Time

- In seven days, a full-fashioned knitting machine was moved from one installation to another
- No disassembly and rebuilding were necessary
- Six weeks of operating time was saved

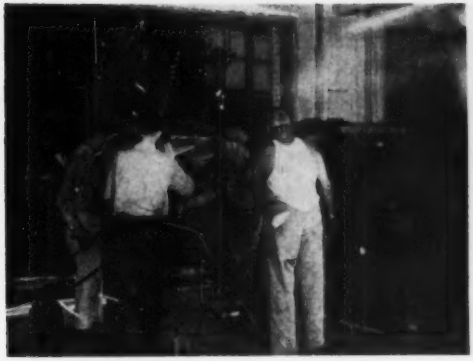
Gropper Knitting Mills decided to move, but they didn't like the prospect of losing two months of operating time.

The problem was how to move five full-fashioned Reading knitting machines from a ninth-story installation to the street and then to their new plant at Long Island City, N. Y., without taking them apart.

Turner Transfer Co., Reading, Pa., and Greensboro, N. C., had the answer.

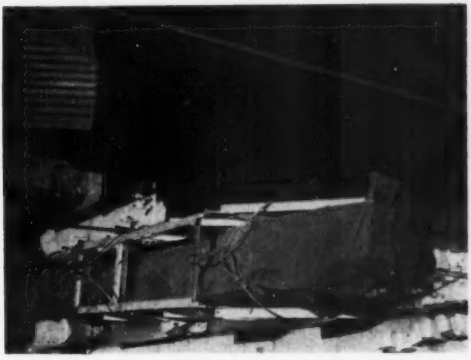
By using their patented "Turner Cradle" and the know-how of their boss rigger, Howard Sharpley, they knocked out a portion of the wall, rigged a 20-ft. cathead boom with two 10-ton electric chain-falls, swung the five machines out one at a time (each weighed over 10 tons and was 37 ft. long), and lowered them to the trucks for the long haul.

Horace Griesbach, superintendent of Gropper's Long Island plant, estimated a complete moving time of seven days, against a normal 60-day job by the old dismantling-and-reassembly method.



By Chain Fall . . .

And Cathead Boom . . .

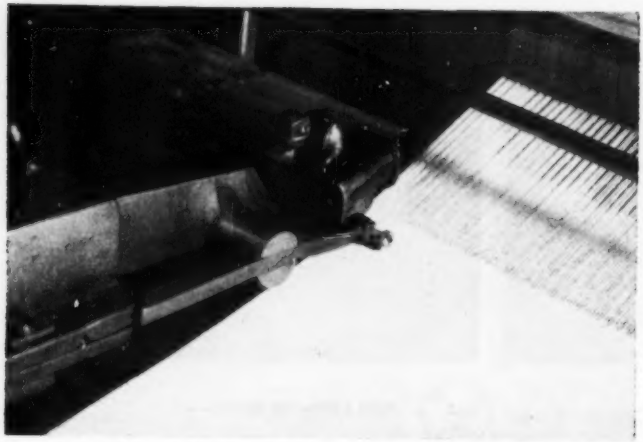


Lower Away!

Down . . .

To the Waiting Truck.

Seven Days Later . . . Production!



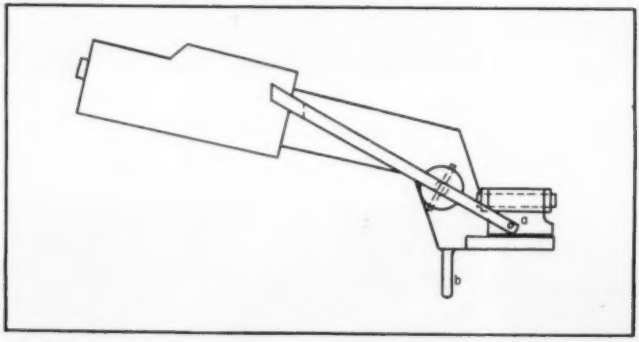
CLOTH IS HELD in a straight line at the temples. The yarn near the selvages is not strained.

TEMPLES Without Rolls Developed at Clemson

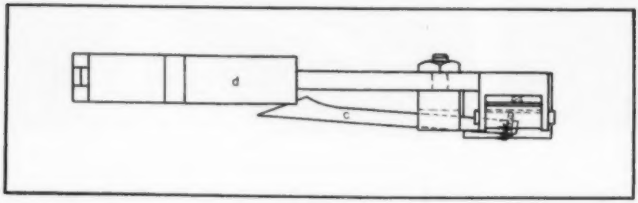
▶ **Special temples made at Clemson will grip fabrics that are difficult to hold to full width in the loom. Among the advantages—**

- **No temple rolls have to be bought**
- **Warp yarns are not stretched**
- **Wavy cloth at the temples is eliminated**

By HUGH M. BROWN
Dean, School of Textiles, Clemson College



THE CLIP *a* IS RELEASED, and the cloth weaves down when the projection *b* at the bottom of the temple is struck by the lay.



THE LEVER *c* AT THE CLIP presses against the temple case *d* to open the clip when the lay reaches front center.

CLOTH THAT IS UNIFORM from selvage to selvage can be woven if our new-type temple is used.

The temple is made from the basic parts of a rayon-type temple with the cap and the rolls removed. The end portion of the temple, where the rolls are recessed at the bottom, is cut off and replaced with a short, flat plate that extends even with the projection underneath the temple.

A clip, similar to a tenter-frame clip, is placed on the cap head. The clip pivots from a pin held by two short stands. A spring holds the clip in the normal holding position, and a lever is pivoted to the temple from a stud and extends from the clip to the temple-arm housing.

When the lay is located at any position except front center, the clip locks the woven selvage in the temple. When the lay reaches the front-center position, the projection at the base of the temple is struck by the lay, the temple is moved back a short distance, the lever strikes the temple-arm housing, the clip is pushed inward against the spring, and the cloth, released from the temple for a moment, is pulled forward.

The spring presses the clip back in its normal holding position when the lay moves backward and the cloth is re-grasped.

If the temple is purposely caused to release the cloth, it re-grips the cloth as soon as the lay reaches the front-center position again.

It seems that this temple will hold any fabric that can be held by gripping only the selvages, and the cloth woven with the temple is uniform in appearance from selvage to selvage.

The clip should compensate for its own wear for a long time.

WARP TENSION Is Constant On C-4 Looms at Clemson

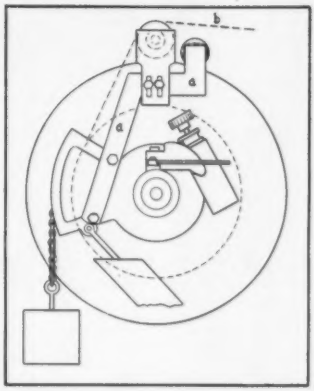
▶Would you like to regulate the tension on your warps when the warp is tied on and forget warp tension until the yarn on the beam is replenished? Clemson College has arranged a let-off that requires no attention after the warp is started.

By HUGH M. BROWN
Dean, School of Textiles, Clemson College

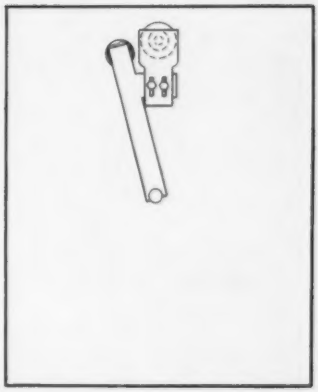
THROUGH RESEARCH at Clemson College, we have eliminated the necessity for daily checking of the warps on a loom for correct tension. The usual procedure in well-run weave rooms, as we understand it, is to check the warp tension on each shift and adjust the let-off weights to insure constant warp tension.

We removed the whiproll from the loom frame and mounted it, through a rigid frame, on the beam itself. The whiproll oscillates with the precision let-off and eliminates the dead weight that existed when the whiproll was attached to the loom frame.

Since, essentially, the whiproll is mounted on the beam, the forces between the beam and the whiproll are internal forces. Only two external forces exist on the new arrangement:



THE WHIPROLL STAND on the let-off end of the loom is bolted to bar *a*. The bar is bolted to the let-off-chain segment and the housing. The warp is shown at *b*.



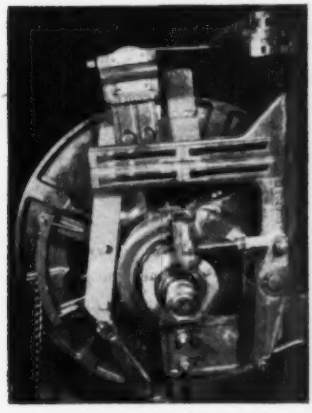
A BAR IS PIVOTED on the beam gudgeon. The drive-end whiproll stand is fastened to the projection on the bar. The bar is fastened to the let-off through a shaft.

Energy is necessary to rotate the beam to release the warp, and the mass inertia of the let-off weights must be overcome.

The internal forces always act at a constant radius from the axis of the beam to the axis of the whiproll, therefore the amount of yarn on the beam has no effect on the warp tension.

The weight for any desired force on the warp can be accurately computed. When the warp beam has the correct amount of weight for a given fabric, the weights never need to be changed as the yarn is wound from the beam.

With this arrangement it is possible to have the tension exactly the same on any number of looms.



THE WHIPROLL MOVES with the oscillating let-off. The old whiproll stand is no longer needed. This warp is nearly empty, and the plunger lever is positioned at its greatest stroke.

THE LET-OFF OSCILLATES, but the whiproll does not offer resistance. The distance from the warp yarn at the whiproll to the beam gudgeon is always the same; thus a variable force is eliminated.

LET-OFF WEIGHTS were placed on the weight lever when the beam was full of yarn. The beam now has only a few cuts of yarn on it, but the weights have not been disturbed.

FIRST INSPECTION on 400-needle nylons is made at the knitting machine by the knitter, with additional spot checking being done by the inspector shown here. A fashion mark knitted into each stocking makes defects caught later easy to trace back to the machines on which they were knitted.

SECOND INSPECTION is made by a full-time inspector with the stocking pulled over a board that emphasizes defects. Defects found during the first and second inspections are called to the attention of the fixer so that any needed machine adjustments can be made. Hose are then tied into bundles for looping.

Two Keys to Quality In 400-NEEDLE KNITTING

► **Frequent inspection and snag-free handling of 400-needle nylon hose are paying off at Richmond Hosiery Mills. Cloth—covering tables, trucks, chairs, and operators' hands—is used extensively to protect the hose from rough handling.**

By E. DALTON WHITE, McGraw-Hill Atlanta Bureau

THERE ARE SO MANY little things that can go wrong in the production of 400-needle circular-knit nylon hosiery that exacting control in all phases of operation is necessary if high quality is to be continuous, more than one mill has found out through sad experience.

Experience at Richmond Hosiery Mills, Rossville, Ga., indicates that you have to "watch everything" from yarn selection through knitting, finishing, and boxing. And high on the control list are frequent inspection and good handling.

This "attention to everything" chalks up about 85% of Richmond's total production as first-quality hose.

The mill has 93 400-needle circular-knitting machines, of which 60 are Scott & Williams "Dancing Twins" and 33 are converted S&W Model "K." Production is in 15-den. nylons with 50-den. yarn in the heel, toe, and welt; nylon service-weight hosiery knitted on 340 needles with 40-den. yarn; and rayon hosiery produced on 300 needles with 100-den. rayon and on 260 needles with 150-den. rayon.

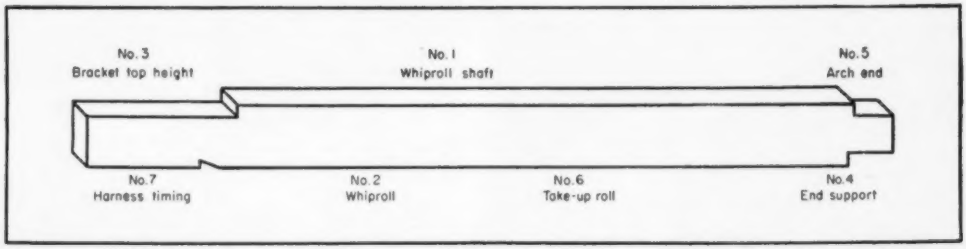
EASIER HANDLING and fewer snags result from the use of chambray cloths to wrap the bundles of hose. The mill formerly used knitted cotton sleeves and washed them after each use. The chambray can be used five times between washings. Hose are laid on the cloth and rolled up.

LOOPERS not only run the risk of mismatching a stitch and a dial point, thereby making a defect, but they also are likely to cause snags by rough handling. Richmond provides the loopers with trough-shaped trucks covered with cloth for depositing looped stockings, seen here at the left.

THIRD INSPECTION comes after a trough-shaped truck of looped stockings is pushed to the inspecting table. Here the hose are placed on a black form, inspected, and classified. White nylon gloves, washed after one shift of use, are worn by the inspector to reduce the chances of snagging the hose.

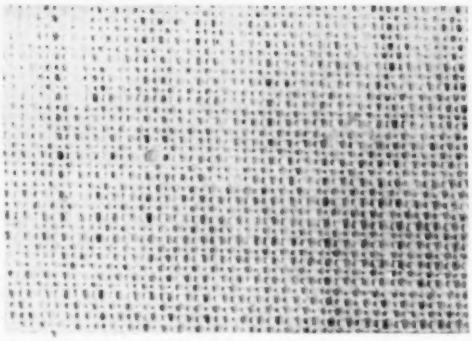
BOARDING operators wear white cotton gloves, also washed after one shift of use and discarded if wear or rough spots occur. Trucks, tables, chairs, and other surfaces the stockings touch during handling are covered with cloth to protect the hose against rough places that might snag them.

This simple wooden loom-adjustment gauge . . .



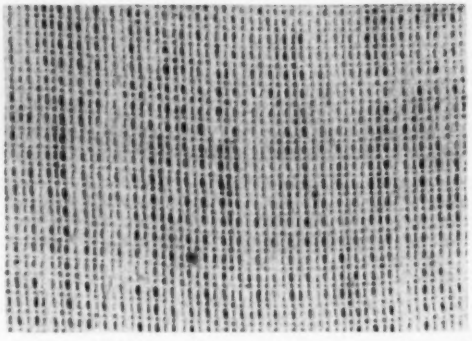
MAKE THE WOODEN GAUGE from a piece of hardwood 1¾ in. square. Seven loom-setting positions are built into the gauge. The thickness and over-all length represent two setting positions. The pictures on the opposite page show you exactly how each setting is made.

. . . will help produce cloth like this . . .



THE UNIFORMLY SPACED ENDS of this cloth were the result of cover settings. Both samples were woven from the same type of yarn.

. . . instead of this



THE REEDY SURFACE of this piece of cloth was caused by usual loom settings where no attempt was made to put a cover on the cloth.

Use Uniform LOOM SETTINGS *To Improve Cloth Appearance*

▶ Cloth appearance can be improved on any fabric from a low-count carded cloth to a combed broadcloth. A few loom settings are the only changes that are needed. The settings will—

- **Eliminate reed marks**
- **Fill the spaces between uneven yarns**
- **Give the cloth an even appearance**

By W. C. WESTBROOK, Consulting Editor, TEXTILE WORLD

COVER IS PUT ON a fabric by raising the warp line. For average weaving conditions, a level warp line is usually used, since the strain on all harnesses is then even, and wear is equalized.

Why Is Cover Necessary?

On heavy or medium cloth constructions, cover is not necessary, and a straight warp line results in fewer broken warp ends. But when yarns are coarse and the number of warp or filling ends per inch is not great enough to "fill in" the weave, the cloth will be reedy and rough.

Most two-harness plain weaves are drawn one end to the heddle eye and two ends to a dent in the reed. With a straight warp line where tension is equal on both sheds of the warp, the warp ends are laid in pairs in definite lines with open gaps between each pair.

One way to prevent pair lines in the cloth is to use a fine reed and draw the warp ends one end per dent. A fine reed is easily damaged, and a spread wire is hard to straighten.

The only other way to space warp ends evenly is to raise the warp line. With the warp line raised, the top shed is slacker than the bottom shed; and when the filling is beaten up by the reed, the slack top-shed ends are spaced regularly.

Put Cover on This Way

Early-timed harnesses will spread the warp ends by forcing apart the two ends in the same dent of the reed. The harnesses should not be timed so early that the warp shed closes on the shuttle while the shuttle is still in the shed, since such a timing will cause broken warp ends, overshots, and slack selvages.

The warp line on the automatic plain loom is changed by raising or lowering the take-up roll, the warp-stop motion, and the whiproll. Several other loom settings have to be made to reposition disturbed parts when the warp line is changed.

A wooden gauge can be used to make all the basic settings accurately.

On E-Model Looms, Do This

These settings are used to set a Draper E-model loom with a mechanical stop motion and a high-roll take-up. The cloth is a two-harness plain suede weave, 41 in. wide, 40x44, 19s warp and 11s filling.

1. The whiproll-shaft bearings are raised to keep the whiproll bearings at the correct position.

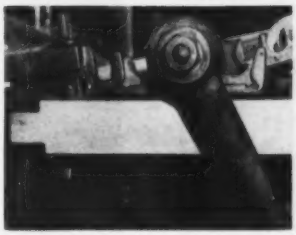
2. The whiproll must be at the correct height to hold the yarn above the center of the warp shed. The aligning points that are commonly used to set the whiproll height (the beam bearing to the bottom of the whiproll) will not give a uniform setting to the whiproll, since the beam bearings are not all set alike and the whiproll bearings and journals are often worn. The setting, as determined by the gauge, is uniform from loom to loom.

3. The warp-stop-motion bracket must be raised to keep the drop wires centered with the high warp line. If the stop motion is not centered with the warp ends, the ends will be chafed and weakened.

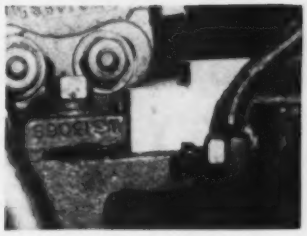
Keep the top of the warp-stop-motion bracket level if the stop motion is equipped with adjustable feeler-bar ends, and tilt the feeler-bar ends to give the correct angle to the stop motion. If the feeler-bar ends are

(Continued on page 240)

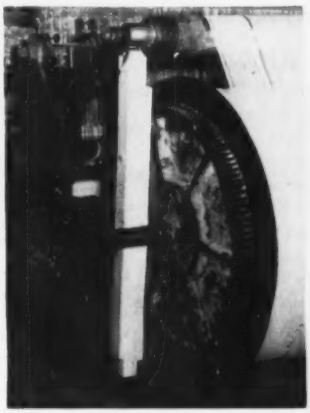
These seven settings made with gauge



1 SQUARE THE BEARINGS with the loomside. Both whiproll bearings are set 1¾ in. (the width of the gauge) over the back horn of the loomside.

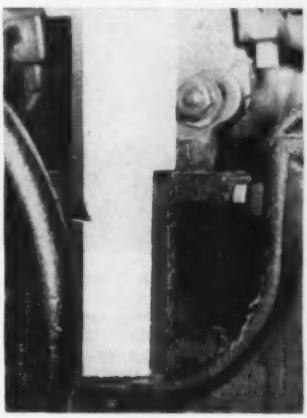


4 DETERMINE THE LENGTH of the shed from the back of the harnesses to the stop motion by setting the feeler-bar end support with the gauge.

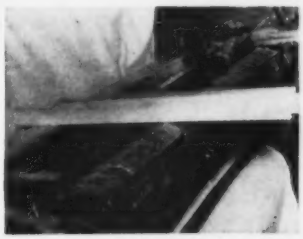


2 SET THE WHIPROLL from the top of the back girder. The gauge is used at its full length and extends to the top of the whiproll.

5 POSITION THE ARCH ENDS to control the length of the shed from the front of the harnesses to the fell of the cloth. This setting is 1 in.



3 RAISE THE BRACKET for the stop motion to 4 in. over the loomside. The top of the bracket is level if the feeler bars are adjustable.



6 MOVE THE TAKE-UP ROLL up to put a cover on the cloth. With the lay on the back-center position, the gauge will be on the take-up roll and above the breast-beam.

7 TIME THE HARNESSES to cross with the shuttle in the right-hand shuttle box. An early timing spreads the warp ends evenly.

SAVES $4,000 A YEAR BY SWITCHING TO SUNOTEX PROCESS AID

A Midwest mill making fine-quality fabrics was well satisfied with the process aid it sprayed on wool during the picking operation. But like every alert textile manufacturer, this company was continually on the lookout for ways of doing things better. That's why it gave a Sun representative the opportunity to study its plant operations. When the Sun man said he believed that Sunotex WO-410 would do as good a job at a substantial saving, the mill decided to find out by running production tests.

The test run proved convincing, and the company adopted Sunotex WO-410. In the six years which have passed, savings of about $4,000 a year have been realized. Nevertheless, several other promising process oils have been tested. Of these process oils, those which performed as well were far more expensive, and those which were cheaper per gallon proved to be inadequate. Recently the plant superintendent said: "Sunotex WO-410 has performed with 100 percent satisfaction during the entire period of use in our plant and has definitely proved to be the least expensive process oil that will do the job properly."

For complete information on Sunotex WO-410 and other Sun textile-process aids, use the coupon below.

REPLACES COSTLY AID. The process aid formerly used by this manufacturer of fine-grade woolen fabrics did a satisfactory job. The company switched to Sunotex WO-410, however, after a production test proved it could equal the performance at almost half the price.

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Sun Oil Company, Philadelphia 3, Pa.

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TECHNICAL ASSISTANCE AVAILABLE. Sun's engineers are at your service for consultation on textile-processing and lubrication problems. It will pay you to utilize their broad textile experience.

MIXES WELL. By adding Sunotex WO-410 to warm water and agitating vigorously, the mill easily obtains a very stable 4:1 emulsion. This means even application and unvarying fiber protection.

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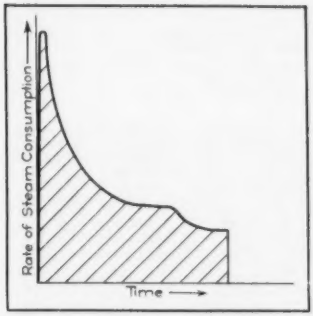
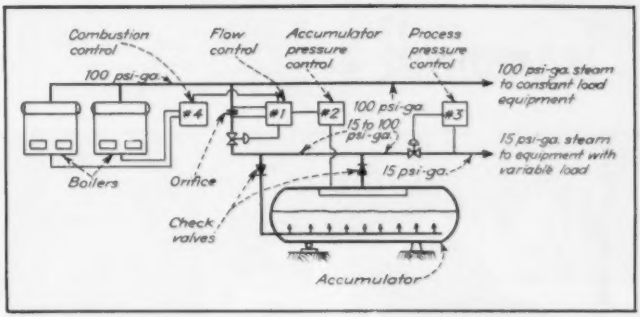


STEAM-CONSUMPTION RATE is increased during a batch-process operation. The steam demand soon levels off to normal.



A TYPICAL STEAM ACCUMULATOR furnishes low-pressure steam for the variable-load processes. High-pressure steam is furnished at a constant load. Boiler efficiency is stepped up by the level load.

Use a STEAM ACCUMULATOR For a Constant Steam Supply

▶When your equipment calls for a peak load of steam, your boilers are often overtaxed. If you install a steam accumulator, you will be sure of plenty of steam at a uniform boiler load. Here are the results of an accumulator installation at a Southern hosiery mill—

- **Boiler operation was reduced**
- **Hosiery production was increased**
- **The hosiery-reject rate was lowered**

By RICHARD LANG, Lockwood Greene Engineers, Inc.

A STEAM ACCUMULATOR is the answer to some of the difficult steam-supply problems encountered in a textile mill.

The accumulator is essentially a reserve supply of steam that is used when a plant temporarily needs more steam than its boilers can supply. The accumulator absorbs energy when the steam system operates with a surplus and yields this energy to the system when the plant needs more steam than is available from its boilers.

Accumulator Levels Out Peak Loads

Many textile mills have periods of peak steam consumption in excess of their average over-all load. At the start of the first shift or after meal periods, when a large percentage of the machinery must be brought up to temperature, steam requirements are high. Batch processes also require steam at varying rates and at varying times. Textile plants that operate with excessive peak loads or large fluctuations should install a steam accumulator to keep their required boiler capacity at a minimum while the boilers are operated at maximum efficiency.

During a typical batch-process operation, the initial peak may last only a short time; but a temporary loss of boiler pressure occurs. If several such process units are put on the line simultaneously; or if other processes draw steam at the same time, the effects on the boiler present a serious problem. The additional steam that is required by the system must be produced by flashing of the boiler water. Tube failure and carry-over often result. If the firing rate is changed to compensate for the extra load, the efficiency of the boiler is reduced and the cost per pound of steam is increased.

Here's How It Works

A schematic arrangement of a steam accumulator should be made before an installation is made. The basic apparatus is usually the same, but different combinations of controls adapt the accumulator to a wide variety of applications.

In the best application of an accumulator, high-pressure steam is furnished to a constant load while the accumulator handles the low-pressure steam for the variable-load processes. A flow-control unit maintains a steady steam flow to the low-pressure system at an average rate to supply the steam for the variable-load requirements. If the steam consumption is equal to the average flow, the accumulator merely floats on the line while the boiler furnishes the necessary steam.

When the variable-load processes draw their maximum load, the additional steam is supplied by the flashing of the water in the accumulator. As the demand drops below the average rate, the difference is absorbed by the accumulator. The accumulator is then returned to the charged condition for the next peak.

The pressure in the accumulator will vary between the limits of boiler pressure and process pressure. For example, pressure in the accumulator will approach the same pressure as that in the boiler when the accumulator is at the fully charged condition.

Teamwork

Cutting through "live" wood in the forest or "dead" wood in industry, results are faster and surer when push-and-pull are based on teamwork.

What can we do to help insure the future of your business? That's what Butterworth engineers have been asking for 131 years — the question has special meaning today.

Thinking of new machines? We will do the utmost to meet your requirements. Making long range plans? Our engineers are at your service. Even now they are teamed with many of America's leading mills, thinking of the years ahead and planning with them to maintain their competitive position.

Butterworth service is offered too, to help your wet finishing department get the most out of what you now have — to keep equipment at peak efficiency. It may be only a spare part you need — but if you need it in a hurry, you'll get it in a hurry if it is humanly possible.

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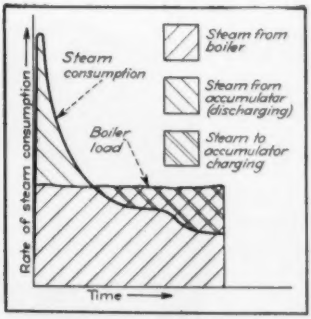
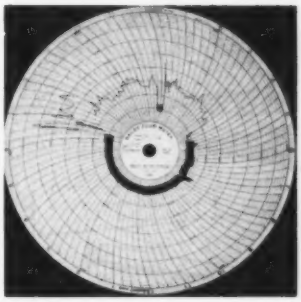
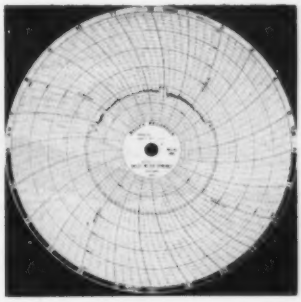


BOILER LOAD REMAINS CONSTANT during peak loads of steam consumption. Extra steam is delivered by the accumulator.



BATCH-PROCESS OPERATION requires peak loads of steam periodically. The boiler is either oversize or overloaded



WITH AN ACCUMULATOR, the boiler operates at a uniform rate and still supplies the steam necessary for peak-load consumption.

When the accumulator is in a discharged condition, its pressure approaches the pressure of the process system.

The combustion control is tied in with the main steam header and the pressure of the accumulator. If the accumulator pressure reaches boiler operating pressure, the firing rate is reduced; and if the accumulator approaches a fully charged condition while the demand is still greater than average, or if the boiler pressure drops, the firing rate is increased. Neither of these limits will be reached if the accumulator is large enough.

FOR ENGINEERS ONLY—

Select the Accumulator Size This Way

The size of the accumulator depends on the quantity of steam the system draws in excess of its average demand. Assume that the average variable steam load is 15,000 lb. per hr., but for 20 min. at the start of the first shift there is a peak demand with an initial flow rate of 47,000 lb. per hr. This peak soon drops off, but the average peak over the 20-min. period is assumed to be 30,000 lb. per hr. The accumulator would be required to supply $(30{,}000 - 15{,}000) \times \frac{20}{60} = 5{,}000$ lb. of steam.

The heat that is available in the water of the accumulator for flashing this steam is the difference in the sensible heat at the maximum and minimum pressures. The enthalpy of saturated water at 100 psi.-ga. is 309.1 Btu., and at 15 psi.-ga. the enthalpy is 218.8 Btu. So each pound of water in the accumulator can yield up 90.3 Btu. to produce steam.

The heat of evaporation of water varies with the pressure. If we use the higher value of 945.2 Btu. at 15 psi.-ga. to cover the worst condition, we find that $(5{,}000 \times 945.2) \div 90.3 = 52{,}400$ lb. of water required to produce 5,000 lb. of steam. At 100 psi.-ga. this weight of water will occupy a volume of 930 cu. ft.

Since space is required at the top of the tank for baffles, etc., the usual practice is to size the tank so that it will be 75% full of water in the fully charged condition. Using this practice as a basis, and using a common pressure-vessel diameter of 8 ft., we can determine the length of the tank to be $930 \div (.75)(\pi)(4^2) = 24.7$ ft. The accumulator tank for this application would be 8 ft. in diameter and 25 ft. long.

If the constant high-pressure load in the example draws 5,000 lb. per hr., and if the accumulator is included in the system, the required boiler capacity will be 15,000 + 5,000 = 20,000 lb. of steam per hr. Pressure to all processes will be constant, and the boilers will operate at a constant load and maximum efficiency.

Without the accumulator, the mill must have a boiler capacity of about $(47{,}000 + 5{,}000)\left(\frac{1}{1.50}\right) = 35{,}000$ lb. of steam per hr.

At this capacity, the boilers must operate for short periods at 150% of the normal load. As the load varies, the pressures in both headers will fluctuate and the constant changing of the firing rate to meet the load will reduce the boiler efficiency.

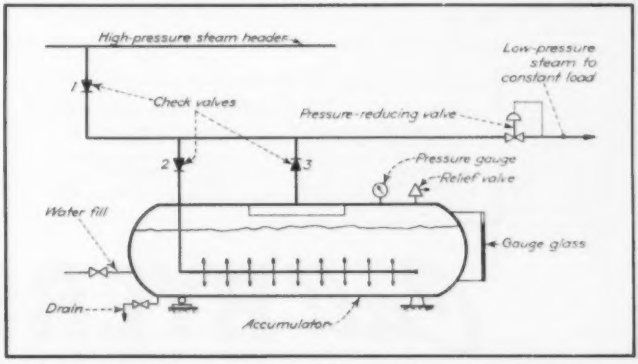
Here's One Accumulator Application

A steam accumulator was used to correct unusual steam supply difficulties for a Southern hosiery manufacturer who was encountering irregular peak loads from a large installation of preboarding machines.

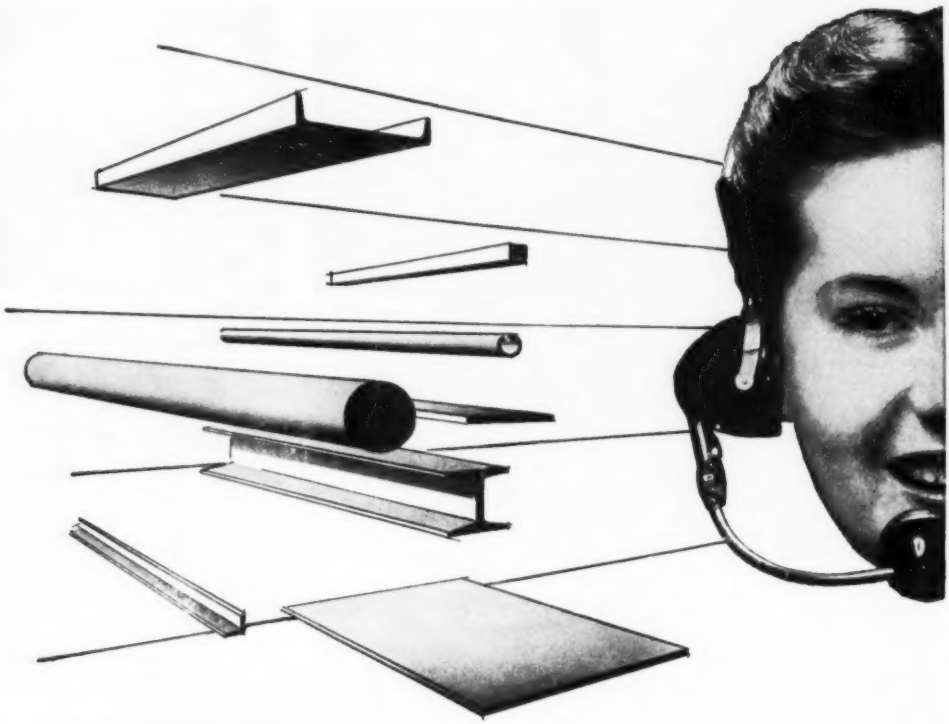
The preboarding operation in the production of nylon hose is a good example of a batch process. In operation, the machine is loaded with stockings, live steam is used to bring it up to the proper temperature and pressure, the pressure and temperature are held the required time to set the nylon, the steam is released through the exhaust, and the machine is unloaded.

The initial steam demand of these machines is high for a few seconds, and the cycle lasts only a few minutes. Since there are many units in this installation, several are often placed on the line in phase with each other. The temporary steam demand was many times greater than the total boiler capacity of the mill. The resulting drop in line pressure was causing production lags and a high reject rate. An effort to solve the problem by

(Continued on page 236)



AN EMERGENCY SUPPLY of steam is insured by the simple accumulator installation in a plant that produces synthetic fibers.



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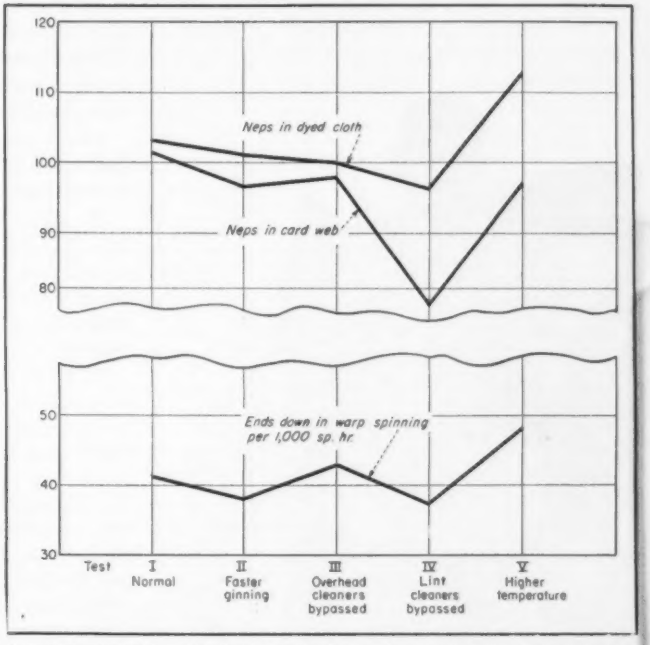
"Dangerous Trend" in GINNING Raises Mill's Costs, Lowers Quality

Mill tests of ginning procedures show that today's gins are damaging cotton in their efforts to raise the grade and price. Overcleaning and overdrying by gins—

- **Increase ends down 38 to 49**
- **Increase neps in card web 25%**
- **Increase neps in cloth 16.5%**
- **Increase cloth costs at least 4.39c a lb.**

By WALTER REGNERY
Joanna Cotton Mills, Joanna, S. C.



AVERAGE RESULTS from 17 mills that tested five ginning procedures by six gins show that ends down and neps drop when gins by-pass lint cleaners and shoot up when the cleaners are used and drying temperature is raised

COTTON GINNERS are following a dangerous trend in their ginning procedures.

Since the grade of cotton affects the price he will get for it, the cotton farmer takes his seed cotton to the gin that he thinks will do the best cleaning job on it. To clean cotton better, ginners have been adding various machines to their ginning lines and subjecting the lint to considerably more processing. While this practice does raise the grade—and therefore the farmer's price—it also damages the fiber much more than the same amount of cleaning done on mill machinery.

This fact was borne out in a series of tests run in 17 mills under the guidance of the National Cotton Council and the American Cotton Manufacturers Institute.

Enough seed cotton to yield 25 bales of lint was ginned in five-bale lots by six gins. Each lot was ginned by different procedures at each gin, but the five specified procedures were duplicated at each of the six gins.

The procedures for ginning were:

1. Normal ginning (that is, according to the usual practices of that gin)
2. Normal procedures but at a faster rate
3. Normal ginning except for bypassing overhead cleaners
4. Normal ginning except for bypassing lint cleaners
5. Normal ginning except for a higher temperature

Based on a talk given before the Southern Textile Assn., Myrtle Beach, S. C.

What the Tests Showed

Results of the tests are shown on the accompanying chart.

Only Test No. 4 was carried out satisfactorily by the gins. Ginning speeds, Test No. 2, under normal procedures were so high that they could not be raised significantly. For Test No. 3, the amount of overhead cleaning that could be by-passed by the different gins varied. Temperatures, for Test No. 5, were already so high that they could not be raised significantly. However, in Test No. 4, all the gins by-passed the lint cleaners.

Mills tested the five sample bales for ends down in spinning, neps in the card web, and neps in dyed cloth. The accompanying chart gives a quick look at over-all results.

Ginner Causes Neps

To a print-cloth mill, neps are one of the most important quality factors in its finished cloth. It is a factor that many times is responsible for cotton cloth losing its place in the market.

In Test No. 4, in which the lint cleaners were by-passed and cotton was given the least amount of machining at the gin, neps in the card web were reduced from 102 to 76—a reduction of 25.5%. Neps in finished cloth were reduced from 105 to 96—a reduction of 8.6%.

In Test No. 5, neps in the cloth were reduced from 115 to 96—or 16.5%.

For a Mill To Correct The Ginner's Damage—

To get a reduction of 25% in the

(Continued on page 196)

Your business is off—that's why I want to talk to you

I'm Clarence Moss.

I represent the Textile Division of Synthane (Laminated Plastics).

I work out of Elizabethton, Tennessee. But right now I'm speaking for all Synthane representatives.

We realize your business is slow. That's why we're picking *this* time to talk to you. When you're busy, you haven't time to spare, but now, during the lull, maybe we can get together more conveniently.

We'd like to tell you about what's current or new in bobbins or pirns, hosiery turning and examining forms, headless package tubes, redraw tubes, redraw caps, rollers and so forth. You'll probably want to know about a new collapsible bobbin for the pre-shrinking of nylon yarn. We've just been granted a patent on it.

We'd like to drop in on you soon with a boxful of samples for you to look over. We think you may want to investigate, and try out, Synthane now . . . before business picks up again.

Just let our people at Oaks, Pennsylvania know you're ready to see us . . . and thanks for listening to me.

Textile Division

SYNTHANE

S

SYNTHANE CORPORATION

Oaks, Pennsylvania

Tests Can Help You
SELECT SECOND HANDS

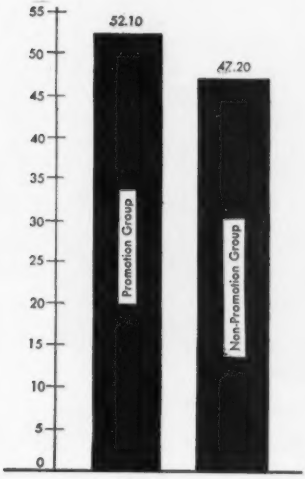


Fig. I

A "PROMOTION GROUP" of second hands scored an average of 3.90 points higher than a "Non-Promotion Group" on a test called *How Supervise?*, which measures knowledge of the best supervisory methods. This difference is statistically significant.

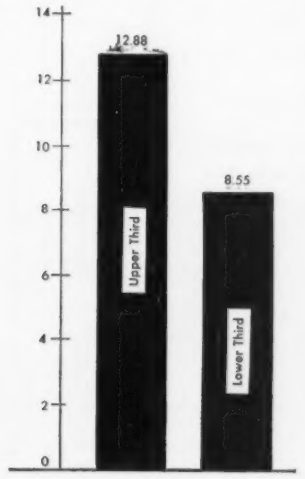


Fig. II

THE UPPER THIRD of the second hands in a rank order of ratings made by their superiors scored an average of 4.33 points higher than the lower third of the second hands in the rating scale on *The Adaptability Test*. This difference is statistically significant.

▶Testing the second hands in a large Southern mill turned up two traits that are important in supervision. The traits are: (1) knowledge of the best methods of supervision, and (2) ability to apply these methods. The tests that measure these traits are now ready for final checking on new applicants in this mill.

By WENDELL M. PATTON, Ph.D.
Senior Associate Bruce Payne & Associates, Inc.

THIS REPORT is taken from a study of second hands in a staple-rayon mill with approximately 2,500 employees and 54 second hands. The purpose of the study was to find, in efficient supervisors, traits and qualities that can be measured and used to select new second hands.

Today it is not enough to know that a man is a good producer—other individual traits and qualities must be taken into consideration. Many times we may not understand why a particular trait would be indicative of good supervision, but as long as it exists and can be measured, we can use it to predict the probability of the success of new supervisors.

The procedure used in this study, in a nutshell, was to select the best possible standards for efficient supervision in this plant and then to compare the standards with the results of the tests used to measure various traits.

Several tests were used, and two of them correlated with the standards. The traits measured by these tests are: (1) knowledge of best methods of supervision, and (2) mental adaptability.

The assumption is that if these tests can differentiate between the present second hands, who are already a selected group, then the tests should work even better with an unselected group, such as applicants for supervisory positions.

Standards Must Be Selected For Each Plant

The selection of standards depends on what records are maintained and what the particular plant expects from its supervisors. Supervisory production records are seldom satisfactory for this purpose.

At this plant, there were some second hands who were viewed by management as possessing the necessary abilities to eventually assume greater responsibility and authority. These second hands were called the Promotion Group and the remainder was called the Non-Promotion Group. Comparison of the Promotion Group to the Non-Promotion Group was selected as our first standard.

Ratings Were the Second Standard

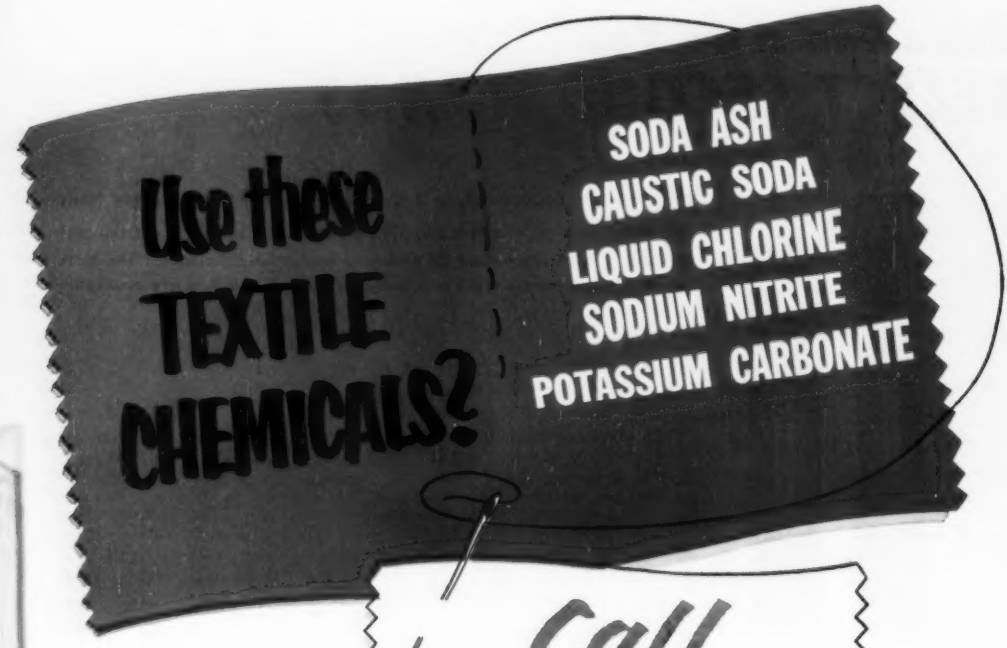
For a second standard, we decided to have composite ratings of the second hands made by the superintendent, assistant superintendents, and overseers of the plant. Each second hand was rated on the basis of his contribution to his job, without consideration for his job's importance or his job experience. From these ratings, a rank-order list was developed by a comparison method to get at least three ratings for each second hand. Then this list was divided into three groups—Upper, Middle, and Lower.

The Lower Group was compared to the Upper Group for the second standard. It is important to remember that the second hands in the Lower Group were giving good enough supervision to be retained by the company. (If this is not clear, think of the rank-order standings of the teams in the major leagues every day in the summer newspapers. The first-place team is considered to have better players than the last-place team, but the players on the last-place team are still good enough to make the major leagues.)

The Two Standards Are Not the Same

The Lower Group does not correspond with the Non-Promotion Group, nor does the Upper Group

(*Continued on page 218*)



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SOLVAY chemicals for textile processing are uniform products of exacting quality.

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—with accent on the word "service". SOLVAY has thirteen sales offices and a coast-to-coast organization of distributors ready to serve you.

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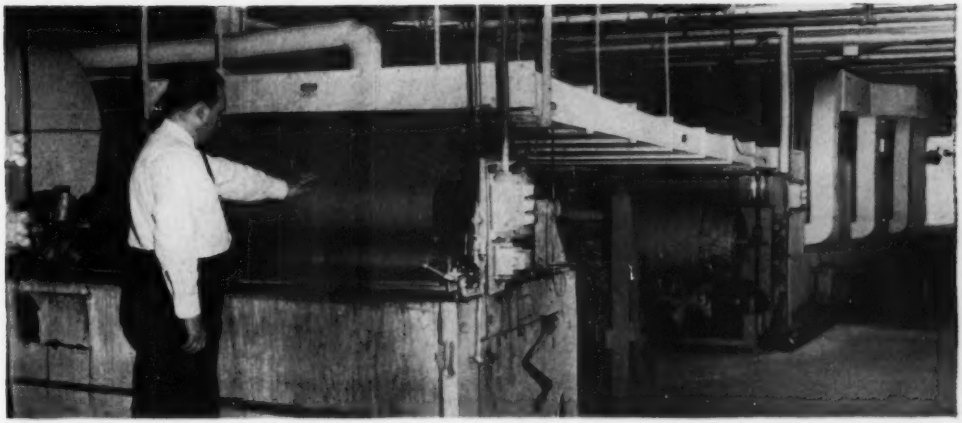


FINAL LACQUERING on a 55-ft. range is obtained from nonvinyls or vinyls and synthetic resins suspended in an alcohol solvent and hot-air dried. Lacquering is the final step in preparing 13- to 20-oz.-per-sq.-yd. paper fabrics in four standard grades for auto and truck seat covers and trunk mattings.

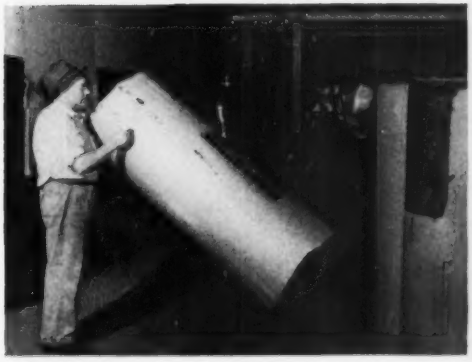
PAPER-FABRIC Manufacturing Needs Close Quality Controls

▶ **Wortendyke Mfg. Co. has found, in two years of operation at its Waynesboro, Va., branch plant, that—**

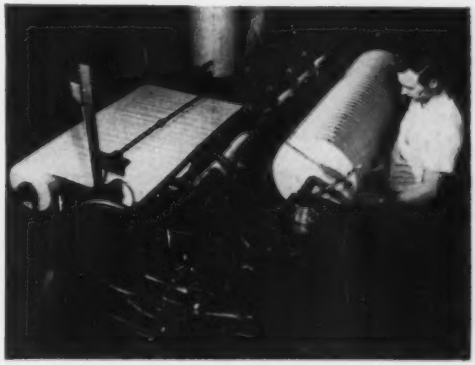
- **Careful checks must be made of each operator's work by a system of marks and tags at each step of processing**
- **Settings and tensions on regular and specially developed machinery must not vary**
- **Controlled atmospheric conditions can greatly ease the twisting, weaving, and finishing of raw paper into attractive automotive fabrics**

By RICHARD C. SCOTT
New York Editor, TEXTILE WORLD

"ALTHOUGH MUCH OF OUR machinery is similar to that found in cotton, wool, or rayon mills, we have had to work out paper-fabric quality-control techniques that would not be used in an ordinary textile-manu-



ROLLS OF PAPER are weighed in (14- and 16-lb. basis weight), inspected, and marked up by George Miller (left). They are then stored by George Pannell with his gasoline-driven lift truck. Rolls are 64 in. wide and average 600 lb. in overall weight.



SLITTER, adapted by Wortendyke, takes paper from the roll in the creel and slits it (center) into widths from ⅜ to 1½ in., depending on the weight of warp or fizzing yarn desired. Two rows of cheeses are formed from alternate slittings. Landon Coffey is the tender.

TEXTILE BANKING COMPANY

Inc.

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Puts your sales on a cash basis
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Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

facturing operation," said Harry Sain, plant superintendent of the Waynesboro, Va., branch of Wortendyke Mfg. Co.

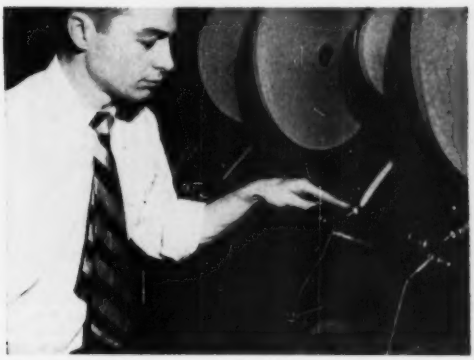
Special Care Given

"The outstanding problems in processing paper into finished woven fabrics center around the atmospheric conditions at the various processes, the tensions and settings you use, and of course the weight and quality of your paper stock to begin with. And because paper yarn is bulky and somewhat uneven, it can easily get out of hand as regards size and appearance.

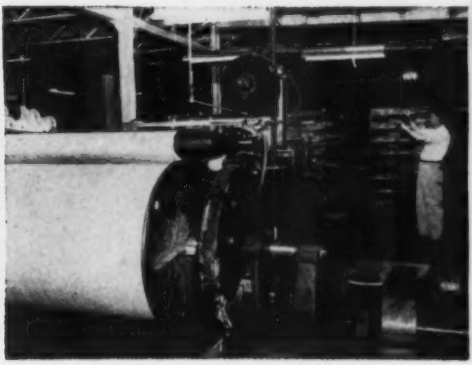
"Knots, for example, show up badly. We have come around to tagging all steps of processing and to making each individual operator responsible for his

SLITTING DISKS in the assembly held by Boyd Cates, production superintendent, are not sharpened because a clean, sheer cut is not desired. Width increments are by ⅛ in. Demmie Layne, production clerk, points out how the paper-cheese edges are rough enough to help in the absorption of the conditioning solution applied next.

CONDITIONING of cheeses consists of twirling them individually by hand in a tub of Wortendyke-prepared wax emulsion and penetrant. Quickly twirling the cheese again right after immersion spreads the emulsion evenly over the cheese surface, as Earl Abshire is doing (right). Cheeses are then stored in stacks to allow for complete penetration of the solution.



WARP TWISTING onto spools is done, in this case, on an H&B 100-spindle ring twister. Four Saco-Lowell 120-spindle C-4 cotton twisters are also used. Bob Branch, company chemist, indicates the porcelain folder that starts the twist on the paper strip. A weighted disk keeps the yarn in the front-roll groove as it is twisted around 2½-in. rings equipped with nylon travelers and onto wooden spools.



WARPING department consists of three Warp Compressor Co. beamers that can hold beams 82 in. wide, with 36-in. flanges. Creel yarn is run from twister spools or from 8x8-in. paper-tube packages previously wound on Universal C6 winders (12 frames of six spindles each). Paper warps run out fairly fast in a loom; so Paul Warren hustles to keep warps ahead for the 62 looms the mill has on paper weaving.

AHCOVELS * give fabrics a softness you can *see*. You don't have to touch the fabric to know that here is the softest, silkiest hand you ever felt! AHCOVEL-finished fabrics drape softer, too!

These AHCOVEL Features Mean Better Processing Results:

Lasting resistance to usual laundering and dry cleaning.

Good stability to heat and storage.

Odorless.

AHCOVELS E., F. and R. assure full retention of light fastness of any color.

AHCOVELS A. and G. are cationic substantive softeners.

AHCOVELS E., F. and R. are anionic substantive softeners.

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PROVIDENCE • RHODE ISLAND
Associated with Imperial Chemical Industries Ltd. London, England

ARNOLD, HOFFMAN & CO., INCORPORATED · EST. 1815 · PROVIDENCE, R. I.
Offices: Charlotte, Cincinnati, New York, Teterboro, Providence
Plants: Charlotte, N. C. · Cincinnati, Ohio · Dighton, Mass.

From Paper to Fabric *(Continued)*

work each day. Identification marks or tags go right along with each box or roll of work, whether it be cheeses, spools, winder tubes, warp beams, woven rolls, repairing, jumbo-roll stitching, waterproofing, calendering, lacquering, or final inspecting. Cards for each roll are checked and filed for future reference in case of a customer complaint.

Materials-Handling Equipment

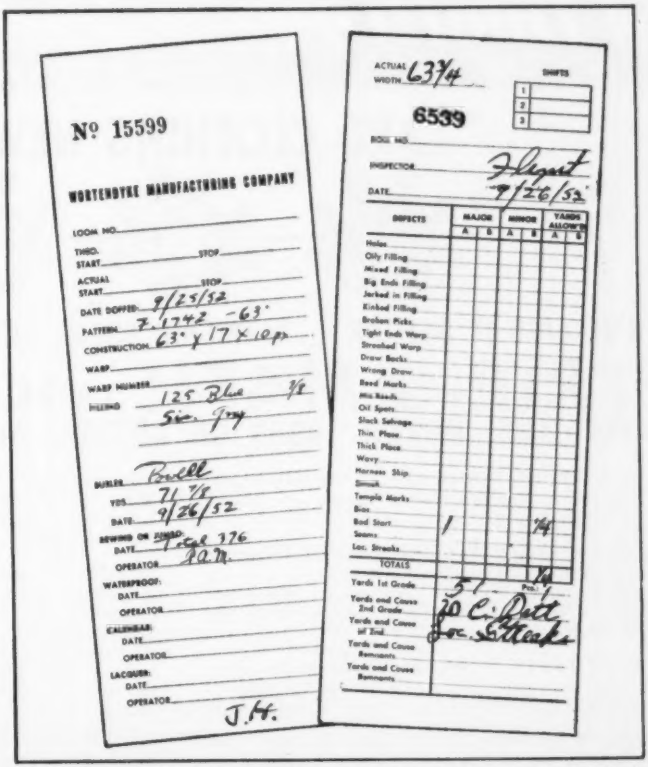
"We use rugged materials-handling equipment to lessen the chance of roll damage and injury to employees handling the 500-lb. paper rolls, 36-in.-diameter warp beams, and 800-lb. jumbo finishing rolls.

"We have a Clark fork-lift truck for receiving incoming paper rolls off the highway trucks that pull up to our door and for loading finished and wrapped rolls onto the trucks for shipment. We have a Lewis hydraulic jack with a swivel platform for use with our big warps, and we also have a one-man warp-handling truck manufactured by Wilkins and Mathews that is a tremendous labor-saver and back-preserver.

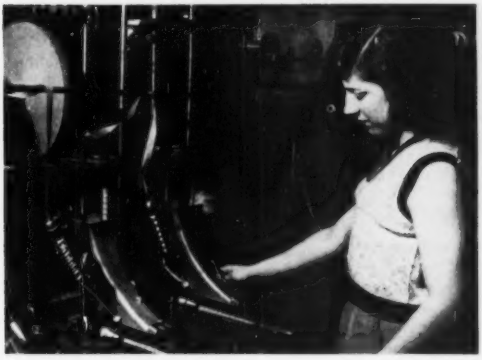
Stock Runs Out Fast

"The number of spindles or looms that one operator can handle with paper yarn is limited by the large diameter of the individual yarns and by the speed with which each package runs out in the creel. More of a winder hand's time is used up creeling in new cheeses than anything else

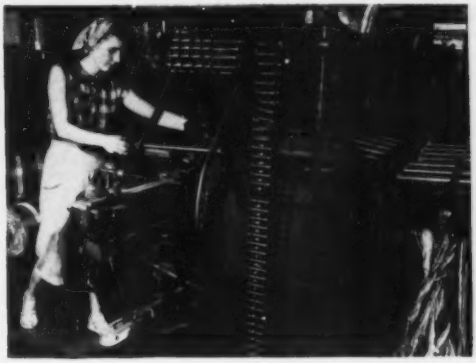
(Continued on page 282)



TAG given to each roll woven has a number on it and stays with the roll until the finished fabric is given its final inspection and wrapped. Reverse side of the ticket includes spaces for marking up all defects visible after final lacquering and drying.



FILLING WINDING (COPPING) is done on 30 automatic Whitin-Schweiter winder spindles and 76 Lazenby cop-winder spindles. A bunch is built up at the base of the quill before the wind starts up. Bobbin doffing, replacement, and starting up again are completely automatic on the Schweiter winders, being operated here by Margaret Coffey. Speed of the automatic operation, as in other steps of manufacturing, is limited greatly by the speed with which the creel stock runs out.



LOOMS weaving 17-to-21-sley and 10-to-16-pick paper fabrics at Waynesboro include both Crompton & Knowles multibox worsted looms and some newer W3s with Knowles heads. Warp stop-motion drop wires are specially weighted to make them effective in signaling end breaks. The heavy filling-feeler motion located just below operator Elizabeth Hodge's right hand, was specially designed by Wortendyke for paper-fabric weaving. Shuttle-bobbin changing is done by hand on a board attached to the breastbeam.

Booth

Originators of **STRIP-O-MATIC** *

CARD CLOTHING NEWS AND VIEWS

60 60 60

WE'VE SAID IT BEFORE... SATISFIED USERS SAY IT AGAIN AND AGAIN

STRIP-O-MATIC CARD CLOTHING CARDS BETTER SAVES TIME, MONEY, LABOR ON COTTON, WOOL AND SYNTHETICS

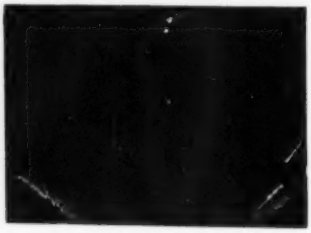
CUTS STRIPPING WASTE BY TWO-THIRDS reports a prominent Pennsylvania woolen manufacturer running fleece, top and synthetics.

COLOR LOTS ARE RUN COMPLETE without stripping. Many modern carpet plants are able to run up to six weeks without stripping. With the conventional clothing that STRIP-O-MATIC replaced, stripping was necessary every day or two.

SAVINGS UP TO $1,000 PER YEAR by eliminating waste stock in stripping from a STRIP-O-MATIC equipped breaker card, are reported by a prominent Canadian Mill.

WOOL: PERFORMANCE RECORD. A finisher card with conventional clothing ran 24 hours—stripped 2 lbs. waste. A finisher with STRIP-O-MATIC ran twelve days (24 hours per day)—stripped 6 oz. Carding was excellent, good web, no fiber damage—saving $170. on one finisher in 12 days.

SYNTHETICS: This photograph shows STRIP-O-MATIC following a 9-months run on Nylon in a Philadelphia yarn mill. There isn't any accumulation of stock. With conventional clothing, stripping was required every 2 to 3 weeks on an 8 hour shift, weekly or oftener with 2 shift operation.



Note small amount of trapped stock after 48 hours of continuous operation. The clothing is easily cleared with a single pass of a vacuum head.

COTTON: Cotton mills, too, are finding greater benefits in carding with the new STRIP-O-MATIC card clothing designed especially for cotton. Equipped with this clothing, carders increased their runs between stripping from three to more than ten times the best obtained with conventional clothing. A number of users who formerly stripped every two to four hours are finding that their time between stripping has increased up to 120 hours. (With continuous stripping, runs to 5 weeks are possible).

BLENDS: STRIP-O-MATIC card clothing is especially adapted to blends of cotton, wool and synthetics, and in addition to carding better with less down time, STRIP-O-MATIC handles the fibers as they come, maintaining the exact proportion that you plan for the yarn, not removing one fiber selectively as is occasionally done with conventional clothing.

A complete line of conventional card clothing including napper clothing, is made by the Benjamin Booth Company to meet individual customer needs. Our primary interest is seeing that our customers get the clothing that cards best for them.

Sincerely yours,

E. Allen Snape Jr.

PRESIDENT

OUR 60th YEAR OF SERVICE

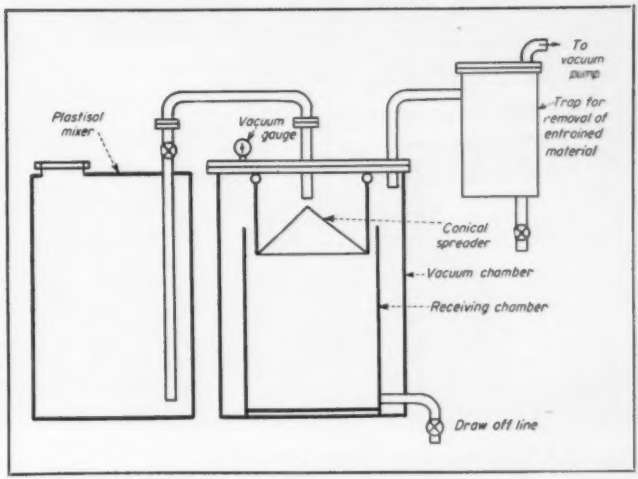
Booth

BENJAMIN BOOTH COMPANY, ALLEGHENY & JANNEY STS., PHILA., PA.

Choose the Proper Components To Compound VINYL COATINGS

▶ End use of the fabric, hand, toxicity, color, cost, and stabilization are factors that must be compromised to reach the satisfactory compound for your purpose.

By THOMAS J. KERR
Coated-Fabrics Consultant



DEAERATION OF PLASTISOLS is effectively accomplished by the use of a setup of this type. Complete removal of air prevents defects caused by bubbling and pin holes.

COMPOUNDING VINYL RESINS is based on a series of compromises. These comprises are necessitated by the fact that no universal plasticizer that can impart all the desirable characteristics necessary for a serviceable coating is available. One plasticizer will produce a film that will be flame resistant but does not age well. Another will give good ageing but will not impart sufficient cold resistance for many uses. A third will give excellent cold resistance but can be used only in limited quantities because it is not compatible in all proportions.

A coating composition that has all the required characteristics can usually be produced by a blend of plasticizers. Selection of a suitable combination of plasicizers resolves itself into a problem of selecting the blend that will give all the characteristics necessary for the required end use at the lowest possible cost.

Resins Vary in Properties

No two of the vinyl resins commercially available perform exactly the same. Each manufacturer's product varies somewhat from the other. Differences in the method of polymerization and drying will affect such characteristics as the particle size and shape. The degree of polymerization, or the molecular weight of the polymer, will change the viscosity in a plastisol dispersion because the size of the molecule affects the degree of solvency of the plasticizer. Many of the resins are copolymers with materials such as vinyl acetate and vinylidine chloride. The effect of plasticizers on these materials also varies with the solubility of the specific polymer in the plasticizer.

The data shown herein in respect to the characteristics of compounds could be duplicated with only reasonable accuracy if the same resin were used. In general, however, the compounding principles are applicable to all resins; therefore, brand names are used in some of the illustrative formulations. The fact that brand names are used does not necessarily mean that the resin indicated is superior to others for the specific application. It is only intended to make the information supplied as practicable as possible.

These variables also make it impractical to set forth the details of compounding for all available materials. The principles of formulation are fundamentally the same regardless of the type of resin used, but the compounder will find it necessary to adjust them to compensate for the specific characteristics of the resin he chooses.

Preparation of Plastisols

Plastisols are normally prepared by adding all the ingredients in a mixer and thoroughly blending them. If the type of mixer is such that considerable heat is generated, it may be necessary to water-jacket it to cool it. If the mixture becomes too hot, it will thicken from the solvent action of the plasticizers on the resin at higher temperatures.

Those dry pigments and fillers, as well as some stabilizers that are difficult to disperse, are ground on a paint mill or some type of colloid mill in a portion of the plasticizer before they are added to the mixer. Many manufacturers of pigments supply such colors in the dispersed form so that they may be added directly to the mixer as received. When these dispersions are used, it is necessary to reduce the total amount of plasticizer in the batch by the amount introduced with the pigment.

Vinyl compounding plasticizers that are solvents for the resin to the extent that a good film may be formed when they are used as the sole plasticizer are classified as primaries. Materials that are compatible enough to substitute for part of the primary plasticizer but are not good solvents alone are termed secondary plasticizers and are used as such.

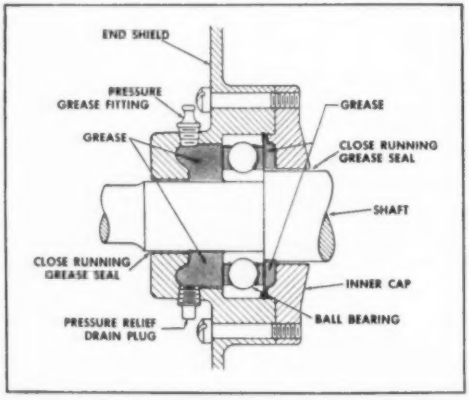
Dioctyl phthalate is the most commonly used plasticizer for vinyl resins. Moderate in price, it comes as near to giving a coating with all the desired characteristics as any other available plasticizer. For this reason, it is used as the standard for the evaluation of plasticizers.

In compounding the plastisol, flow characteristics are controlled by the type of materials selected as well as the physical properties desired in the fused coating. Plasticizers, fillers, and

"Our G-E ball-bearing loom motors . . .

. . . sure are easy on maintenance men"

Says Guy H. Wallace, Master Mechanic at Monroe Mills, Monroe, Ga.



LARGE GREASE RESERVOIRS surround bearings with ample supply of grease to assure safer, more continuous operation under the tough, pulsating load imposed by the loom.

"We haven't had to grease our G-E Ball-Bearing Loom Motors since we put them in" says Guy H. Wallace, Master Mechanic at the Monroe Mill, Monroe, Ga. "But more important, when it becomes necessary, we'll be able to do it—easy—with a grease-gun—without tearing down the motors."

G-E Ball-Bearing Loom Motors stand up under the rigid speed and torque requirements of today's looms. Rugged cast-iron stator frames and end shields, and totally-enclosed stator construction simplify installation and upkeep. Careful electrical design adds extra life and reliability. For more information, contact your G-E Apparatus Sales Office or write for Bulletin GEA-5858. General Electric Company, Schenectady 5, N. Y.

654-25

Years of service—
then *easy* relubrication!

Bearing lubrication is no problem here. Grease reservoirs contain four times as much grease as in conventional sealed bearing construction. Bearing housing holds grease in constant contact with bearings. Eventually, perhaps after two years of service, lubrication will be necessary to lengthen bearing life. You do it with a grease gun—without removing the end shields!

GENERAL ELECTRIC

Five Classes of Vinyl Compounds Used

1. Plastisols or paste dispersions, are dispersions of the resin in plasticizer. With a true plastisol resin it is possible to produce a smooth paste suitable for coating by mixing the ingredients together. No grinding or mechanical assistance, other than a thorough mixing, is required; and no volatile diluent is needed. Ingredients such as certain pigments and fillers may require grinding before they are added to the plastisol blend to insure uniformity of their distribution.

2. Modified plastisols are of two types. First are those plastisols to which a small amount of a volatile organic diluent is added to reduce viscosity or otherwise change the application characteristics. Such diluents are seldom added in amounts greater than 5%. They are normally added to the mixture after the dispersion has been prepared.

Second are those to which a gelling agent has been added. They are sometimes referred to as plastigels. These gelling agents form a coating that will not sink into the fabric during curing as much as normal plastisol. They aid in making lightweight coatings on open sheeting.

3. Organisols are dispersions of the resin and other compounding ingredients in a mixture of plasticizer and volatile organic diluents. Grinding is necessary to break up resin agglomerates, to aid the uniform wetting of the resin, and to evenly disperse the resin in the plasticizer and diluent.

4. Solution coating is the preparation of a colloidal solution of the resin in organic solvent to which the other compounding ingredients are added.

5. Water-dispersion coatings are made from a synthetic latex. Such a coating is produced by polymerization of the resin by a water-dispersion technique and stabilizing the compound so that it will not coagulate under normal conditions of storage and handling. Other compounding ingredients are added in the form of water solutions, emulsions, or slurries.

pigments all have some effect on the viscosity of the paste.

Choose Your Plasticizers For Function

Plasticizer selection is extremely critical, for it not only serves to give the compound many of the characteristics necessary for serviceability but also acts as the vehicle for dispersion as well. As the vehicle, its effect on viscosity, thixotropy [the property of gels that causes them to liquify when they are shaken], and the temperature of fusion of the paste must be given consideration, since these characteristics play an important part in determining if the plastisol will coat satisfactorily.

Plastisols were prepared with a standard formula of 65 parts of plasticizer to 100 parts of resin. The viscosities were determined with a Brookfield viscosity meter at 20 rpm. The approximate viscosities obtained with a few commonly used plasticizers are tabulated to illustrate the effect they exert on viscosity of the paste.

Both initial viscosity and viscosity developed after two weeks of ageing are recorded. The latter is important and must be given consideration by the compounder, since the paste must retain the flow properties required for satisfactory coating for a reasonable period of time.

Viscosity in Centipoises

Plasticizer	Initial	2 wk.
Dioctyl phthalate	11,500	14,000
Tricresyl phosphate	16,500	24,000
Dioctyl sebacate	3,500	8,500

A wide range of viscosities can be achieved by blending plasticizers. The following table shows the effect on viscosity of combinations of other plasticizers with dioctyl phthalate in a standard recipe. By the use of the same base formula as before, 76.6% of the total plasticizer is dioctyl phthalate in all cases and the other 23.4% is of the plasticizer shown in the table. A barium-cadmium stabilizer was included on the basis of 5 parts per 100 of resin. This stabilizer has some tendency to reduce the viscosity.

Viscosity in Centipoises

Plasticizer	Initial	2 wk.
Methyl cellosolve acetyl ricinoleate	3,300	7,000
Dioctyl sebacate	3,000	5,000
Sovaloid C (a mineral oil fraction)	6,200	15,000

Esters and Phosphates Are Used

Esters of alcohols containing seven or more carbons have found considerable application as plasticizers.

Shorter-chain alcohols are too volatile. Phthalate and adipate esters might be classified as general-purpose plasticizers. Sebacate and azelate esters give good cold resistance and are often used in combination with the phthalate esters to improve the cold resistance of the compound.

Certain phosphates—derivatives of which tricresyl phosphate, tri (2-ethylhexyl) phosphate, and various cresyl diphenyl phosphates are the most commonly used—are excellent plasticizers. They impart flame resistance and are usually used as a part of the plasticizer system where flame resistance is a requirement. The tri (2-ethylhexyl) phosphate also gives good cold resistance. As a class, the phosphates are more difficult to stabilize than the esters.

Various polymeric materials are also used as plasticizers. They are low in volatility and nonmarring, and they generally give good ageing characteristics. Since they are not solvents for the resin, fusion is more difficult and higher temperatures must be used to form a good film. When they are used in combination with ester-type plasticizers, the coatings should be very carefully tested, for in some instances the nonmarring and other characteristics for which they are used are lost. Some of them are not too compatible and have some tendency to bleed to the surface, particularly when they are used in combinations that contain other secondary plasticizers.

Secondary Plasticizers Reduce Cost

There are a number of other materials used that might be classified as secondary plasticizers. One of the primary objects in using them is to reduce the cost of the compound. Many of them, used in quantities of not more than 20% of the total plasticizer, do not have much detrimental effect on the quality of the coating. Such materials as chlorinated paraffins and special cuts of mineral oil are typical of this class of compounds.

Care must be exercised to be sure that the resulting compound is entirely safe from the point of view of toxicity.

To obtain the maximum in working characteristics and ultimate film properties at a minimum cost, the compounder must have data on the effect of each plasticizer. Such data are available in the literature or from the plasticizer manufacturers in the form of catalogs and data sheets.

(*Continued on page 192*)

It's better to get
all your valves
from ONE source
Because when you do this you avoid
— the confusion that accompanies stocking spare parts for valves of several different makes.
— the multiple stocking of valves and parts because different makes are not interchangeable.
— the needless complications that confront your maintenance department in making repairs.
— the chance that some valves are not backed by adequate manufacturer's engineering services.
The Powell Line is so complete that you can get all your valves from one source.
The Wm. Powell Co.
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Fig. 2491. Stainless Steel O. S. & Y. Gate Valve for 150 pounds W. P. Available in a variety of other corrosion-resisting metals and alloys. Also made with screwed ends.
POWELL
BRONZE, IRON, STEEL AND CORROSION-RESISTING VALVES
DEPENDABLE VALVES
SINCE 1846

EVERY SOCK in this packing room, regardless of the size of the sock or the size of yarn from which it was knitted, has the same number of stitches per square inch. Maryon Hosiery Mill calls them "proportioned" hosiery.

AFTER A CHANGE of cylinders and needles, a factory-trained fixer carefully adjusts the machine for the new setup. One of the critical adjustments is to make certain that eyelets put the proper tension on the yarn.

Complete on This Page

Proportioned HALF-HOSE— A Better Knitting Technique?

▶ Proportioning needles according to cylinder diameter has made half-hose quality more uniform at Maryon Hosiery Mill. The formula is: add or take out 16 needles for each ¼-in. increase or decrease in cylinder size.

By E. DALTON WHITE, McGraw-Hill Atlanta Bureau

TO INCREASE THE SIZE of circular half-hose, most knitting mills lengthen the stitch, loosen the stitch, or use a larger yarn. These methods are time-honored practices and produce good-quality socks. The drawback is that socks of different sizes do not have the same number of stitches per square inch of fabric.

Maryon Hosiery Mill, Carrollton, Ga., follows a practice that eliminates this drawback. At Maryon, a Size 6 sock, for example, will have the same number of stitches (and the same weight of fabric, if the same size of yarn is used) per square inch as a Size 10.

Maryon calls these socks "proportioned" hosiery, which means that the number of needles is proportioned to the size of the cylinder. When a machine head is increased or decreased ¼ in. in diameter, Maryon increases or decreases the number of needles by 16.

The mill specializes in ingrain and fancy socks of 64-gauge stripes and 24-gauge wrap reverse in a variety of colors and patterns. Vat-dyed 40/2 to 50/2 mercerized yarn is used in the body of the socks, and 20-den. nylon splicing is used to reinforce the heel and toe.

The Banner wrap-reverse knitting machines were made to mill specifications. Machines knitting stripes and wrap reverse are fitted with heads varying in ¼-in. sizes from 2¼ in. to 3¼ in. to produce socks from Size 6 to Size 10½.

Machine settings are:

Machine head	Number of needles	Size sock
2¼ (in.)	156	6 and 6½
2½	172	7 and 7½
2¾	188	8 and 8½
3	204	9 and 9½
3¼	220	10 and 10½

SOCKS ARE INSPECTED frequently to spot any variations in knitting quality. One of the points noted in this argyle pattern is the evenness and uniformity of the argyle wrap as a check on drum synchronization.

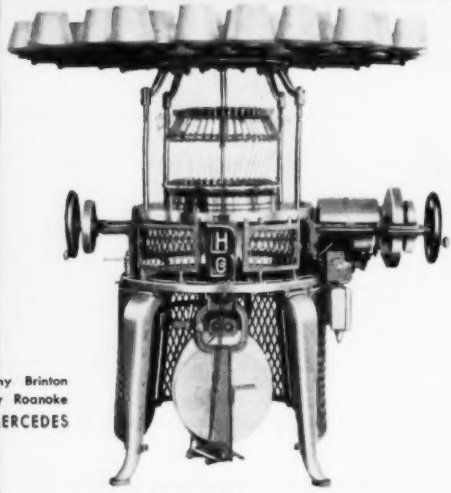
LEADING THE KNIT PARADE

Roanoke MILLS, INC.

OF ROANOKE, VA.

producing garments of proven popularity for Henry J. Tully & Co., for many years an outstanding name in knitwear.

Quality knitwear requires quality knitting machines. That's why BRINTON has been a watchword among the world's greatest knitwear makers since 1868. Brinton machines on your production line give your garments built-in saleability.



One of the many Brinton machines used by Roanoke is the Model MERCEDES shown here.

Engineered for the World's Greatest Knitwear Makers

BRINTON

CIRCULAR KNITTING MACHINES

WASHINGTON AVE. & III ST., PHILA. 24, PA., U.S.A.

Model MERCEDES Style RMP

This high production revolving cylinder machine makes a wide variety of articles. It produces that fine balbriggan or plain jersey fabric for either underwear, basque, polo or T-shirts with colored yarns.

It has no special attachments—it's easy to understand and operate. It operates continuously, too, by simply using double cones on the stationary bobbin table.

Write for more detailed information on the MERCEDES, a machine of proved performance with average production of 75 to 80 yards per hour on every machine size.

Pointers FOR SUPERVISORS

When Is EMPLOYEE HEALTH A Concern of Management?

► **Be sure you are within your rights when you say that a worker's health is your business. A union may challenge you, and an arbitrator may say you were interfering.**

By **PAUL A. KING,** Attorney, Bigelow-Sanford Carpet Co.

IF A COMPANY DID IT, it was called paternalism. But if the union did it, it was called good unionism and that was okay. We refer to the hot and heavy organizing days of the thirties when unions were taking pot shots at employers who furnished their employees with fringe benefits that today are almost taken for granted as being an employee's due. Times have changed!

But the charge of paternalism isn't quite dead. Once in awhile you hear a union call an employer paternalistic. We saw it happen when a company doctor sent home a worker he felt wasn't well enough to do the job. Doc thought he might have returned to the job too soon after his illness. We saw it happen when, in the course of a routine company physical examination, a doctor uncovered a high-blood-pressure condition and sent the worker off the job. The union grieved. The employee's own doctor had said he was okay.

A lot of union folk say that the employee's good or bad health is none of the company's business—as long as he does the job. On the other hand, there is often the overzealous doc who cherishes the belief that he is the protector of his flock—the company's employees—and would like to have a completely sanitary shop. Then there is the small-town doctor who often gives Joe a clean bill of health out of sympathy with his family problems or because he has no knowledge of mill conditions. These viewpoints may be extremes, but among them there is enough disagreement to make for grievances and arbitrations.

What position should a company take? There are many, but one that seems reasonable to us starts with the premise that the union is right: The health of the employee is the sole concern of the employee. It is not up to the employer to tell an employee he can't work merely because of his high blood pressure. When there are five mouths at home for the worker to feed, sending him home to take things easy is unrealistic and similar to sending him off to a Florida vacation when he can't afford the price of a second-hand jalopy to get him there, much less the price of food and board. His high blood pressure isn't going to settle down when he has to worry about dwindling savings because his company income has been cut off. It would seem that unless the company is willing to subsidize an employee's lay-off for reasons of health, it would be better to leave the employee's health in the employee's hands.

However, a point is reached where the health of the employee becomes a legitimate concern of the company. When that point is reached, the union has no right to shout hands-off. That point is reached where

—the employee's bad health keeps him from doing the job adequately.

—his bad health jeopardizes the safety of other employees. (A hot-rivet thrower subject to sudden dizzy spells isn't the fellow to work on a high structure.) It certainly would seem that an employer at least has a moral duty to maintain a safe plant. An employee's bad health may result in accidents involving others or himself and thus increase workman's compensation rates.

—permitting a sick employee to return to work prematurely may result in a longer illness later on and thus increase the cost to the company of company-paid accident and health benefits.

Obviously, from the above list, the employee's health is a concern of the employer in many instances. Possibly more often than not.

Professor Dale Yoder of the University of Minnesota states in his book *Personnel Management and Industrial Relations:*

> "The health of employees is always a matter of concern to those who are charged with responsibility for the management of industrial relations, not primarily because of any paternalistic leanings but because health is directly related to efficiency in the performance of the day's task and because health hazards may be both a direct and indirect source of expense."

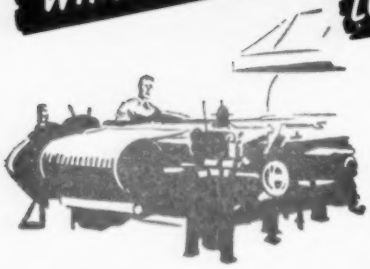
The above list, incidentally, is important. Should any grievance on the subject be taken to arbitration, you stand a better chance of winning it if you can show a dollars-and-sense interest. Arbitrators dislike unfounded employer interference in employee matters and what they call arbitrary and discriminatory action. You must show a legitimate interest. We think the points outlined above represent a legitimate interest.

Other points must also be kept in mind if you ever go to arbitration on the subject of health. Never argue that the employee's health prevents him from doing the job unless you are able

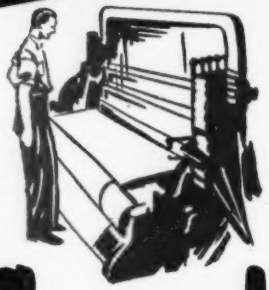
(*Continued on page 214*)

Reduce:

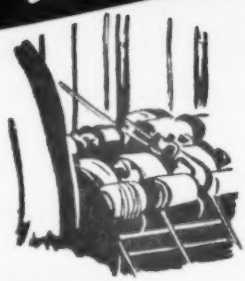
WARP BREAKS



LOOM STOPPAGES



LAP-UPS



Brytex Controls Fibers

Prove the practical value of any Brytex product at our expense!

FOR SLASHING

LUBRENE — A well known, versatile product that increases pliability and lubricates the warp. For rayon, acetate, cotton and nylon when used with gelatin, dextrine, soybean, and certain resins.

SPUN SIZE S — Warp sizing gum for spun acetate, spun rayon and blends with wool. Insures maximum penetration *plus* pliability. Reduced shedding and balling improves weaving efficiency. Easily removed in finishing.

SYTEX — New warp size for viscose and acetate *filament* yarns. Deposits an extremely tough, pliable film for better weaving. Runs cleaner than gelatine or casein type sizes. A highly concentrated powder that, dissolves readily. Easily desized.

FOR FILLING

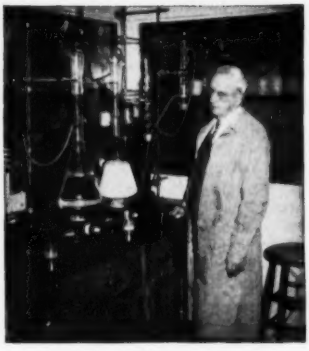
CONDITIONOL 173 — Efficiently sets the highest twist, deadening yarn and insuring kinkless filling; also increases breaking strength. Contains inhibitors against rust and mildew.

FOR ROVING

CONDITIONOL W — Eliminates STATIC in woolen, worsted and blended fibers! Increases yield, decreases double ends on cards, roving and spinning frames.

FREE TRIAL SAMPLE

Which of these Brytex products could make your job easier? Ask for a free sample of any that you would like to give a mill test. It does not obligate you in any way and may be the cure for most of your fiber control problems.



Send your problems to Bryant

We maintain an unusual laboratory, headed by a seasoned textile man and staffed with competent chemists. Chemical problems are realistically attacked with an intimate knowledge of mill conditions. We invite you to put your fibre control problems in our lab without cost or obligation.

Brytex PRODUCTS

BRYANT CHEMICAL CORPORATION

N. QUINCY 71, MASS. — BOX 2301, SPARTANBURG, S. C.

For more information, write direct or use Reader Service post card.

Exploring

The Textile Community

DAN RIVER Tells Its Story To Its Neighbors

▶ Your mill may be the economic backbone of the community. It may be the moving sociological force in your part of the country. But the people who benefit most may not realize your full importance to them unless you tell them the real story of your company and its activities. Here's how one big mill gets its message across.

By MILDRED BARNWELL ANDREWS

AN OUTSTANDING PROGRAM of community-relations advertising has gained full momentum as Dan River Mills, Inc., tells the 45,000 citizens of Danville, Va., and neighboring villages and towns just what the world's largest single-community textile operation is doing and how its doings affect the town.

Dan River is not the only employer in the city, which is noted also for its tobacco mart, hosiery mill, and several other thriving small industries; but it is the largest, employing 12,500 from Danville and the immediate area. There is scarcely a family in Danville that does not have some connection with the huge mill. If the pulse of the mill slows down or quickens, then so does the general business of Danville. To many, the mill and the town have always been synonymous.

As the Mill Goes, So Goes the Town

But sometimes the town was puzzled by swiftly changing mill operations. Sometimes the town was fearful when distorted stories leaked out about the mill's plans for the future. More often than not, the stories that leaked were the only news the Danville people had about the mill's plans or about changes it was making.

Dan River has in times past inaugurated various community-relations activities, but they were not planned on a continuing basis and too often were dropped soon after they were started. But all that is changed now. This year a long-range plan has been put in force to bring about better community relations and clearer understanding. The town is being told about the mill and its activities in a smart and forthright manner. And in just a few months, a new feeling has been generated in Danville.

The program was officially launched in March, when the first of a weekly series of institutional radio programs was broadcast over both local stations, and correlated newspaper advertising was started in each of the three local papers. The combination of communications media has already proved its value in audience and reader reaction.

Method for Success

A lot of work by the mill's public relations department preceded the introductory effort. A list of 30 possible subjects for the broadcasts was drawn up, to insure a flexibility of subject matter to cover the initial 13-week radio contract period. A professional script writer was brought in from New York to help with the first few programs. A board of review composed of the vice president in charge of manufacturing, the director of personnel administration, the general superintendent, and the public relations director passed on each pro-

(Continued on page 252)

NEWSPAPER ADS like these explain what Dan River Mills is doing and how its activities affect the people in its community.

Cook

PATENTED P&N

...THE ONLY COMPLETELY AUTOMATIC CLOTH OPENING RANGE

Just one man

- a. Removes twist
- b. Removes tacking thread
- c. Opens cloth
- d. Extracts water
- e. Folds cloth

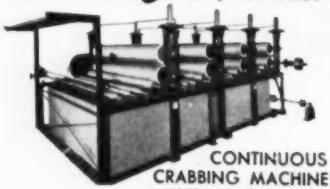
VACUUM EXTRACTOR

On certain fabrics, squeeze rolls can be replaced by this Cook Scutcher with extractor.

Only one operator handles the entire detwisting, (detacking if required), opening, extracting and folding operations. WOOLENS, WORSTEDS, BLENDS, SYNTHETICS and COTTONS, wide or narrow, light or heavy fabrics are safely handled at speeds up to 70 yards per minute. Only one manufacturer — Cook — has the know-how to build this range. Only one manufacturer — Cook — accepts the responsibility for the satisfactory operation of all the machinery as a unit.

The range is composed of proven machines, synchronized for variable speeds and utilizes electric-eye stop motions throughout. The COOK DETACKER (shown at left) operates at the most advantageous point, after the twist is removed. If you are using one of the 700 Cook Detwisters now in operation, you know Cook machines are dependable. If we are new to you, won't you send for our complete catalog?

Another Cook Product



CONTINUOUS CRABBING MACHINE WITH 4 OR MORE STAINLESS STEEL BOWLS

COOK-P&N MACHINE CO., INC., 365 DORCHESTER AVE., BOSTON 27, MASS.

The Reader AUDITED PAID CIRCULATION ABC *His Mark*

THE ABC SYMBOL which is printed at the head of this page is, in a very real sense, *your* brand on this magazine. Those letters stand for Audit Bureau of Circulations. The symbol indicates that the magazine is a member and supporter of that Bureau.

To the advertiser who contemplates using the magazine as an advertising medium, this symbol has a well-recognized significance. It tells him that the circulation records and practices of the magazine are wide open to the auditors of the Bureau, who check the publisher's claims and make public the precise terms and conditions under which subscriptions are obtained. And it assures him that the magazine stays in business by virtue of a demonstrated demand from its readers as shown by their paid subscriptions or newsstand purchases.

BUT HERE we are concerned only with the significance of ABC to you as a reader. For when the advertisers, the advertising agencies, and the publishers founded the Bureau nearly forty years ago to help establish honest circulation figures, they unwittingly set up a cooperative institution that has become a major safeguard for the interests of the reading public.

That is because membership in ABC constitutes one of the strongest guarantees that any publication can offer of its primary devotion to the interests of its readers. And by making that guarantee possible, ABC becomes a major safeguard of the freedom of the press, an objective of exceptional importance in these days when the public is flooded with propaganda from so many sources.

THE SUREST MEANS by which to preserve a free press is to keep it directly answerable to the reading public it would serve. It follows, then, that the survival of a truly free press must depend on its acceptance by that public; and that means in turn that the people must have in their hands some adequate means for holding the publishers responsible to them.

No one has yet devised any means to that end more simple, more direct or more practical than the paid subscription or newsstand purchase price. The right to purchase or refrain from purchasing a publication gives to the readers and to no one else the power to pass judgment on whether that publication should continue to serve the reading public.

TO SUPERVISE this vital process, to check and certify the integrity of the publication's circulation methods and claims, requires a strict and continuing audit of each publication's success in meeting this test of its public acceptance. To that essential function the ABC has contributed mightily by the conscientious performance of its mission. And that is why we are able to have a press supported, for the most part, by advertising revenues, but not controlled as to its circulation or content by any influence other than its readers.

When an advertiser consults the ABC statement of a publication to ascertain the amount, the quality and the trend of its circulation, he does so in the legitimate pursuit of his own interest. But at the same time, inevitably, he is helping the ABC to keep the press responsible and responsive to the reading public. For, in effect, he is asking the publication to demonstrate through its circulation figures that it owes its standing to a voluntary demand by its readers.

SO THE Audit Bureau of Circulations, by auditing and certifying paid circulations, has come to perform a vital service to the readers of this magazine and of every other member publication. And in performing that service, it helps to maintain in our country a press that is answerable to the reading public and to it alone. So long as the practices and principles for which ABC stands continue to prevail in American publishing, we shall find in it a sure support for a truly free press, responsible only to the public it serves.

McGraw-Hill Publishing Company

Amazing "Friction Fighter"

extends bearing life as much as 17½ times... stops oil drippage! Saved $1275 on one machine!

ALEMITE *Automatic* OIL-MIST

Now from Alemite—world leader in lubrication—comes this great friction fighting achievement. Alemite Oil-Mist! The most efficient, continuous, fully automatic system in the field of machinery lubrication.

Alemite Oil-Mist! The system that atomizes oil into *mist*—distributes it through tubing to bearings—bathes *all* bearing surfaces with fresh, clean, cool oil film. A system that simplifies and materially cuts the cost of machinery lubrication. And the lubricator unit has no moving parts.

Oil-Mist uniformly maintains oil film on plain and anti-friction bearings, gears and chains *regardless of variations in load, temperature or speed*. Eliminates the "human element."

Here! Direct from a field report is the latest proof of Oil-Mist results!

Before Oil-Mist: 100 hours was the average life of spindle bearings on the precision grinder of a leading manufacturer. Cost of each replacement—$85 for the bearing and labor. *Plus* downtime.

After Oil-Mist: The same grinder has run 1,638 hours without a bearing replacement! Total saving to date: $1,275 (after deducting both the cost of the Oil-Mist unit and installation). **Name on request*

ALEMITE OIL-MIST Lubricates All Types of Mechanisms

Alemite OIL-MIST Lubrication

A PRODUCT OF SW STEWART-WARNER

Check All These OIL-MIST Advantages!

- **Reduces bearing temperatures as much as 20%.**
- **Continuous, uniform lubrication of all bearings.**
- **Air pressure seals bearings against dirt.**
- **Reduces oil consumption—up to 90%.**
- **Prevents product spoilage.**
- **Eliminates guesswork—each bearing picks up as much Oil-Mist as it needs.**
- **Reduces starting and running torque.**

Get the Facts NOW!

Alemite, Division of Stewart-Warner, Dept. J-102
1850 Diversey Parkway, Chicago 14, Illinois

☐ Please send me a FREE copy of your new and complete Oil-Mist Catalog.

☐ Please have your Alemite Lubrication Representative arrange a desk-top demonstration of Oil-Mist. This entails no cost or obligation on my part.

My name .....

Title .....

Company .....

Street .....

City ..... State .....

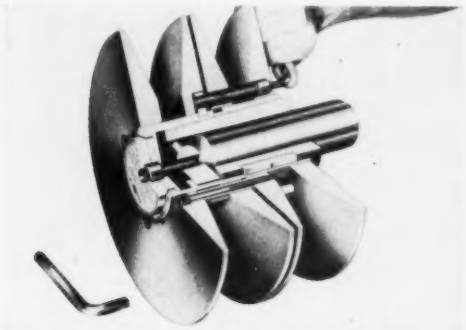
TEXTILE Equipment NEWS

New Variable-Speed Drive Facilitates Frame Speed Changes

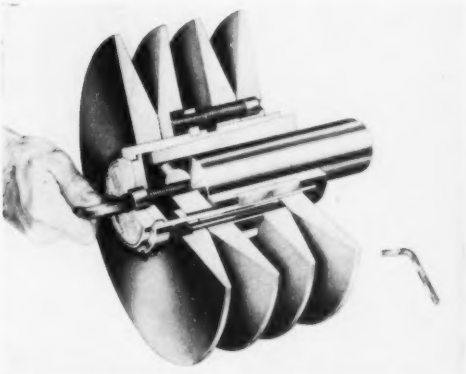
A new spinning-frame drive incorporating the Dodge "Taper-Lock" principle has been developed by and is now available from Dodge Mfg. Corp., South William St., Mishawaka, Ind. The four units that comprise the new drive have been designed to cut down time on speed changes when necessary and thus increase production.

Components of the new variable-speed drive are: (1) a variable-pitch motor sheave; (2) a set of wide-range belts; (3) a companion sheave; and (4) a slide motor base. The taper-lock principle is used in the bushings for both sheaves in the new drive and makes for rapidity and ease in speed changes. The sheaves occupy a minimum space on the shaft.

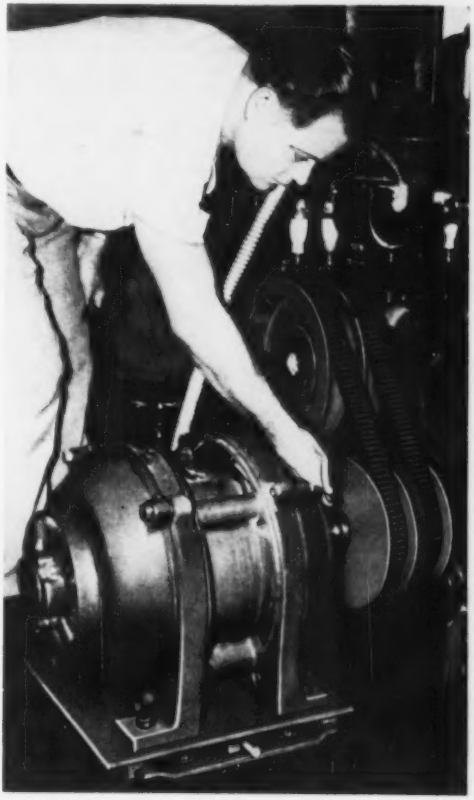
The variable-sheave assembly locks on the motor shaft as a unit with the turn of a screw. Pitch diameter is changed easily by adjusting a screw located at either end of the sheave. Normally the sheave is factory assembled, with the adjusting point located on the motor side. The



VARIABLE-PITCH MOTOR SHEAVE requires only a standard socket wrench to lock or unlock on the motor shaft.



PITCH-DIAMETER ADJUSTMENTS on the variable-pitch sheave are easy and positive. They are made with a single adjusting screw from either end of the sheave.



APPLICATION of the variable-speed drive on a spinning frame shows how the pitch diameter is easily adjusted. The slide motor base preserves proper belt tensions.

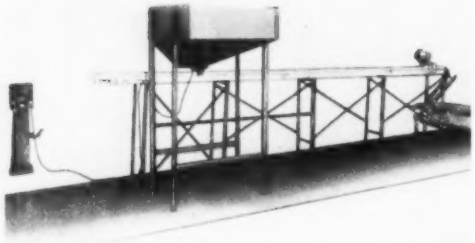
pitch diameter can be set accurately and cylinder speeds held to extremely close limits.

The belts are Dodge "Sealed-Life" belts with the latest design "R" section, with deep side walls that insure long life. Transverse ribs provide great lateral rigidity. Belts are oilproof, heat resistant, and static conducting.

The precision-grooved companion sheave in the drive is held firmly and true to the shaft by the taper-lock bushing. The sheave has no projecting parts. In cases where a change in the companion sheave is necessary, the bushing makes the change both quick and easy.

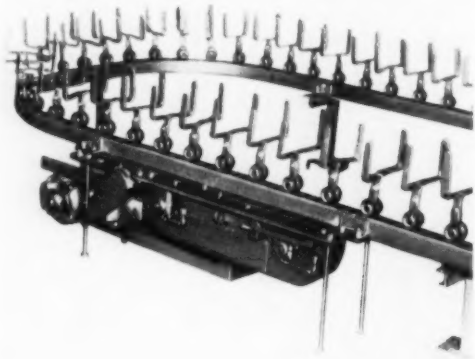
The slide motor base permits changes in center distances to preserve proper belt tension as the variable pitch sheave is adjusted for different speeds. The base is of rugged all-steel construction. A full range of centers is provided with a turn of one screw. The base is compact, of flush design, and is available in standard sizes for NEMA frame motors.

New Conveyor Equipment Eases Automatic-Spooler Bobbin Feeding



STEEL HOPPER at left vibrates at a controlled intensity and eliminates tangled bobbins as well as controls the number of bobbins discharged per minute. The oval-shaped conveyer belt at the right goes around the automatic spooler. The belt is made flexible enough to go around the curves without buckling, yet tough enough to hold the bobbin load without dragging. The absence of joints eliminates yarn hang-ups.

A closed-type conveying system for the continuous or intermittent feeding of bobbins to automatic spoolers or other machines has been developed by Sunray Co., Box 445, Spartanburg, S. C. Component parts are illustrated here.

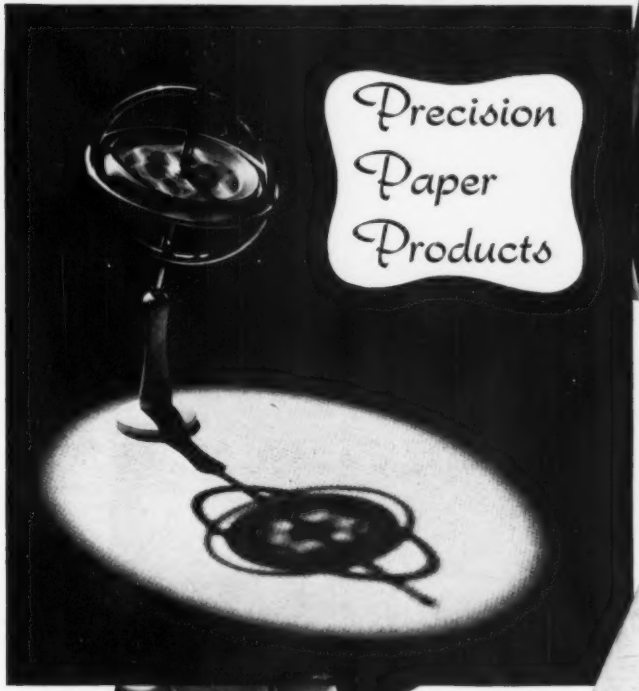


U-SHAPED SUPPORTING MEMBERS are the frame on which the endless conveyer belt runs. Ball-bearing rollers give quiet operation with a minimum of resistance.

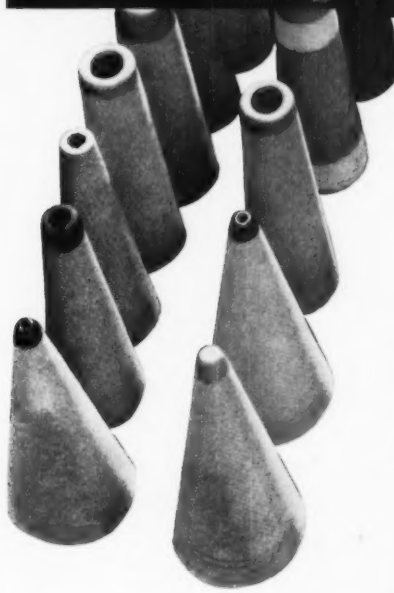
DUMPING MACHINE automatically dumps a loaded large-sized truck into a storage hopper and can be used in conjunction with the conveyer system.

SERVING THE TEXTILE INDUSTRY SINCE 1899

SONOCO *Cones*



STANDARD
OF THE
WORLD



If it can be wound on a cone — if it can be delivered from a cone — SONOCO already has, or will develop, a cone to fit the yarn! 53 years experience qualifies SONOCO in assisting you to solve any yarn packaging or carrier problem.

sonoco
"RUNS THE GOODS"
PAPER CARRIERS
REG. U.S. PAT. OFF.

SONOCO PRODUCTS COMPANY

MYSTIC
CONN.

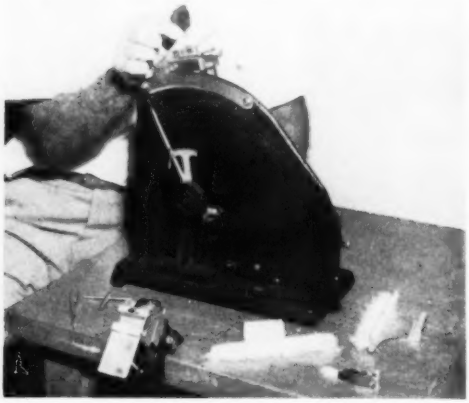
HARTSVILLE
S. C.

BRANTFORD
ONT.

DEPENDABLE SOURCE OF SUPPLY

 For more information, write direct or use Reader Service post card.

"Stelometer" Cotton-Fiber Tester Measures Elongation and Strength



ELONGATION AND TENSILE STRENGTH of cotton fibers are measured at the same time on the new "Stelometer" that has been developed at the University of Tennessee under a research program sponsored by the U. S. Dept. of Agriculture.

A new instrument for measuring both tensile (breaking) strength and elongation (stretch) of small tufts of cotton fibers has been developed by the University of Tennessee Fiber-Research Laboratory in Knoxville, under a research contract sponsored by the U. S. Department of Agriculture.

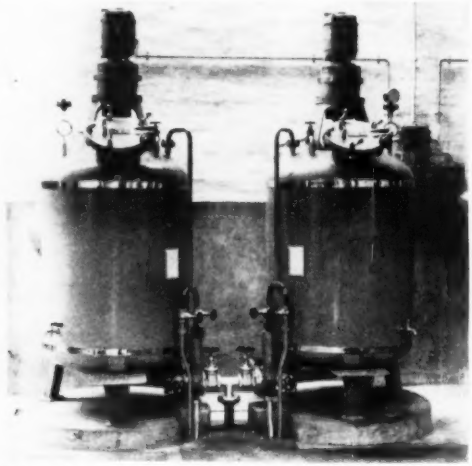
As in other practical testers, a small tuft of fibers is gripped between two pairs of specially designed jaws spaced a short distance apart. By a pendulum-type mechanism an increasing load is applied to one pair of jaws until the fibers break.

The new tensile tester, called the "Stelometer" (from *ST*rength-*EL*ongation-*METER*) has the advantage over previous fiber testers of measuring both tensile strength and the elongation of stretch obtained prior to break. Since fiber elongation is an important factor in the ability of fabrics to stand hard wear, the tester should prove valuable in selecting cottons especially suited to this use.

The Stelometer also features improvements in speed of operation and accuracy of results that are essential in routine testing of raw cotton at a mill. It should also be useful to breeders in their efforts to develop cottons for specific fabrics and end uses.

Dr. Kenneth L. Hertel, director of the Tennessee Fiber-Research Laboratory, calls the new instrument "as significant to the cotton industry as the earlier development of the Fibrograph and the Arealometer." The former measures fiber length; and the latter, fiber fineness. These instruments were also developed at the University's fiber laboratory.

Pressure-Cooked and -Stored Size Eliminates Heat Loss and Crusting



A SIZE claimed to be as smooth as that produced by a homogenizer can be made in quick time and stored for a day or two without deterioration or appreciable heat loss in these size cookers from Switzerland.

A pressure-system warp-size cooker (Model K) that acts at the same time as a preparation unit and as a day-or-two storage vessel that eliminates deterioration of the prepared size has been made available by Ruti Machine Works Ltd., Ruti, Zurich, Switzerland. The size cooker has already proved its value in more than one European mill.

When water, starch, and other ingredients have been mixed by the rapidly moving agitator, the lid is closed down and steam is let in through the bottom of the cooker. This bottom inlet increases the action of the agitator. When all the air has been pushed out through the air tap, the cooker is closed. From this moment onwards, the size liquid is under steam pressure until it is used. Due to the fact that the size does not get into contact with any air, the formation of crusts is eliminated.

Because of the insulation around the container, heat loss is cut down to a minimum, and the liquid can be kept warm for a long time. For instance, liquid that has been cooked the evening before retains a temperature of over 176° F. until the next morning. Thus the slasher can be put into operation without any loss of time.

Because the size is circulated by means of steam pressure, no pump is needed. The fact that air is eliminated and that the liquid is transferred so rapidly makes the concentration of size remain practically unchanged.

Various devices and instruments permit a constant and exact control and observation of the cooker. The cooker is made of high-quality rust- and acid-proof chrome nickel steel; the outer part is made either chromed or covered with heat-resisting paint.

Significant measurements of the Ruti warp-size cooker are (1) a capacity of 66, 88, or 110 gal.; (2) a total height of 78, 86, or 94¾ in.; (3) a cylinder diameter of 36¼ in. on all three models; (4) a 2-hp. motor; and (5) a working pressure of 28.44 psi.

Another Smooth Operation

If you've seen Textile Spring-Beard Needles in operation, you have seen the effects of their smooth, mirror-like finish . . . The yarn slides around the needle end smoothly, evenly, quickly. This makes a big difference in improved, high-speed knitting.

Smoothness is but one of the many advantages you get from Textile Spring-Beard Needles. Every stage in the production of Textile Needles is under rigid, scientific control — automatic and electronic — from the selection of the proper steel to the final packaging. They are your assurance of a finer fabric, lower production costs.

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Thread-Guide Material Next to Diamonds in Luster Retention

The "hardest and strongest material for thread guides ever developed by us" has been announced by American Lava Corp., Manufacturers Rd., Chattanooga 5, Tenn. Known as AlSiMag 513, the guide material is No. 9 on the Mohs' scale. Diamond is said to be the only material that will retain its original finish for a longer time.

The new thread guides, remarkable for their chip resistance, have been in use in some textile firms for three years already, being evaluated under commercial conditions. A better material than AlSiMag 192, AlSiMag 513 guides at the same price are expected to take some of the former's market.

AlSiMag 513 material will be featured by the manufacturer at the Greenville Show this month.

Napping Energy Indicators Provided for Gessner Machines

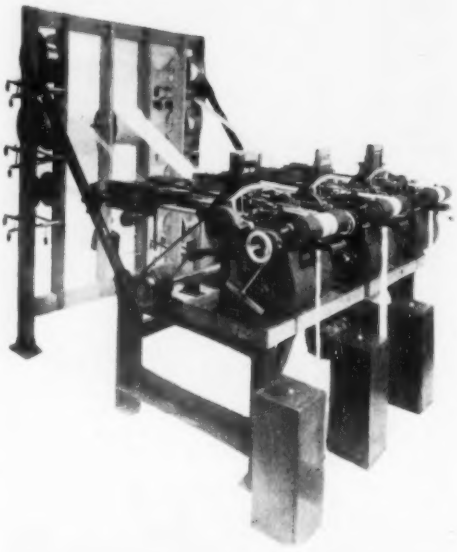
A new method of indicating energy on both Gessner double- and single-acting nappers has been developed and announced by David Gessner Co., Fremont St., Worcester, Mass. Energy, or the amount of nap raised, has long been a difficult force to indicate and tabulate. By the same token, the accuracy by which this factor can be computed becomes important to the efficient operation of a napper.

The new energy indicators give a continuous indication of energy as the napper is being operated. Any change in the energy force is instantly observed. The fact that this energy indication can be tabulated for future reference is particularly important whenever it may be necessary to duplicate previously napped finishes.

The new indicators are to be included on all new Gessner nappers. They can also be installed on most existing nappers.

AMOUNT OF NAP from a Gessner napping machine can be indicated and tabulated for future reference by means of these napping energy indicators brought out by the napping-machines manufacturer.

Italian Narrow-Fabric Loom Inserts 450 Double Picks per Min.



SHUTTLELESS RIBBON AND WEBBING LOOM is suitable for both heavy industrial and finer apparel work up to 2⅜ in. wide. A single strand of filling is pulled from each upright rectangular box by a lightweight flat picking arm that synchronizes with the shedding motion at speeds up to 450 double picks (900 single picks) per min.

A new Italian-made loom that is now available in the United States through British Italian Trading Co. Ltd., 75 Bishopsgate, London E. C. 2, England, eliminates the limiting capacity of the ordinary narrow-fabric-loom shuttle and gives speeds up to 900 single picks per min. The loom, called the Sitam 3A60, manufactured at Milan, Italy, is suitable for any type of narrow-fabric work, heavy or light. Ribbons and webbings up to 2⅜ in. can be woven on the loom.

The loom frame is made of channel and single steels, with the three heads bolted to a wooden block. Each head is independent of the other two in speed, yarn numbers being run, or warp ends or filling picks per inch. Warp and filling stop motions are provided.

Two picks, an outward and a return pick, are inserted in the fabric with each shedding motion. The pick is held at the far end by means of a selvage binding yarn wound on a small spool that oscillates in a vertical plane parallel with the warp and close to it. The binder yarn inserts itself over the single pick and thus holds it before the filling guide arm withdraws to make the return pick.

Other characteristics of the three-head loom are a 67½-in. maximum width, 48-in. length, 48-in. height, 6 to 101 picks per in., a maximum of 12 harness, an 0.8-hp. motor, and a weight of 1,000 lb.

Plan Your Boiler Installation this Way..

...to Balance Load Factor with Low Investment
...to Meet Present Needs and Future Expansion...

CLEAVER-BROOKS self-contained steam boilers are the answer to both present and future steam needs. You can install Cleaver-Brooks boilers in units to fit your present steam capacity requirements . . . keeping your investment at a minimum and your boiler efficiency at a maximum. Here's how it works . . .

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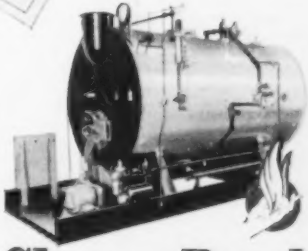
As increased steam needs arise, additional Cleaver-Brooks boilers can be added to keep pace with your expanded requirements.

With this flexible program, you have the greatest return from your boiler investment — minimum original cost and lowest operating cost. Your boilers are always operating at maximum efficiency (80%) over the entire working range (30 to 100%).

Cleaver-Brooks self-contained boilers are ideal for multiple installations because of their compactness, low headroom requirements, fast installation, automatic operation, range of sizes. Available in standard models—15 to 500 hp.; 15 to 250 psi; gas, oil or combination gas and oil fired units.

Get all the story — write today for latest catalog.



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New Humidifying Unit Is Self-Contained and Versatile

SEVERAL THOUSAND CUBIC FEET of room volume under normal conditions can be automatically and precisely humidified by this unit.

A "Type E" humidifier has been brought out by The Bahnson Co., 1024 S. Marshall St., Winston-Salem, N. C., that is designed to provide automatically controlled humidification in all types of textile mills. Units can be used for complete humidification systems, for spot humidification in large spaces, for boosting the capacity of existing systems, and for precise humidity control in laboratories or pilot units.

The self-contained units are quickly and simply installed by suspending them from the ceiling. They are then connected for water supply and electricity.

Water at normal temperatures and up to 80-psi. pressure is atomized by centrifugal force and is distributed horizontally through a 360° opening. Any portion of the discharge opening can be blocked off for directional distribution.

Units evaporate up to 3 gal. per hr. and can be installed singly or in groups with automatic control. Each unit will humidify several thousand cubic feet of room volume at normal conditions.

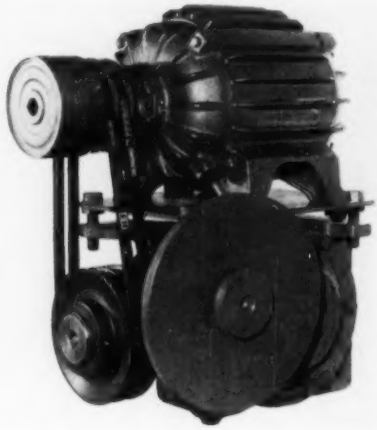
The construction of the units, except for the heavy-duty ¼-hp. motor, is of non-corrosive metals with silver-gray hammerloid finish. Units measure 15¼ in. high by 18¼ in. in diameter and weigh 55 lb.

Off-the-Floor V-Belt Drive Saves Space in Card Rooms

A new "package" drive for cards has been developed by Allis-Chalmers Mfg. Co., Milwaukee 1, Wis. The new unit consists of a 1½-hp. 1,740-rpm. standard enclosed motor, Falk gear reducer, automatic friction clutch, and "Texrope" drives. The right-angle, single-reduction gear permits mounting the motor at a right angle to the card shaft, with the unit extending only a few inches into the aisle adjacent to the card. The drive mounts directly on the card-cylinder shaft with a torque arm mounted on the card base or suitable anchoring point.

The automatic clutch makes possible use of a motor with standard torque and eliminates the high starting current required during the first few seconds of card operation. Two-step pulleys are provided on the reducer, a 10-in. sheave for stripping the cylinder, and a 3-in. sheave for stripping the doffer.

The unit is reversible and so can be used for either right or left-hand mounting.



AUTOMATIC CLUTCH on this card drive makes possible the use of a standard-torque motor and thus eliminates the high starting current usually required when a card is started up.

British Half-Hose Machine Finishes 24 Doz. Pr. per Hr.

THIS NEW BRITISH MACHINE conditions, stretches, presses, and dries half-hose in a continuous and automatic process. Manufactured by Messrs. Samuel Pegg & Son, Barkby Rd., Leicester, England, a subsidiary of Mellor Bromley & Co. Ltd., also of Leicester, the new machine can process 24 to 35 doz. pr. per hr. Two operators are required, one for the job of stripping and the other for the work of trimming.

The socks pass first through a pair of conditioning beds where dry steam is blown through while the articles are under pressure. Grippers then close on the welt and stretch the sock down the form to insure uniform finish length. The socks pass through a second pair of conditioning beds and then between a steam-heated finishing press. Drying is completed as the forms move through a steam-heated insulated cabinet running practically the length of the machine, in which the temperature may be varied to 250° F.

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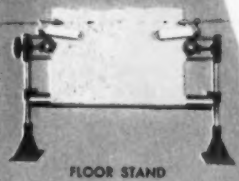
PRECISION GUIDERS

Maintain Accurate Lateral Alignment on all Materials

GUIDER HEAD

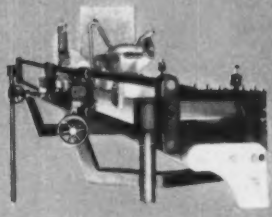
NARROW FABRICS GUIDING

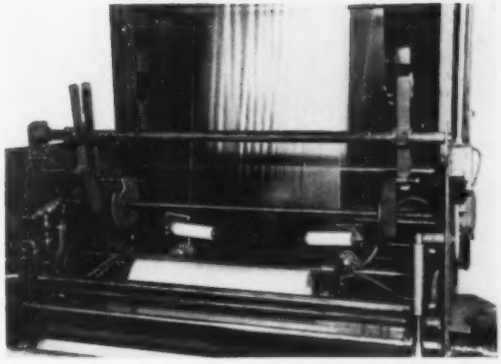


FLOOR STAND

BRACKET STAND

TENTER STAND CLIP TYPE, OR PIN TYPE WITHOUT ELECTRIC FEEDERS





The above installation shows vertical guiding and opening out to full width Polyethelene films — courtesy of Gering Products, Inc., Kenilworth, N. J.

From heavy tire cord to delicate films — up, down, across, or any angle, versatile Mount Hope Precision Guiders give positive *but gentle* control within extremely narrow limits.

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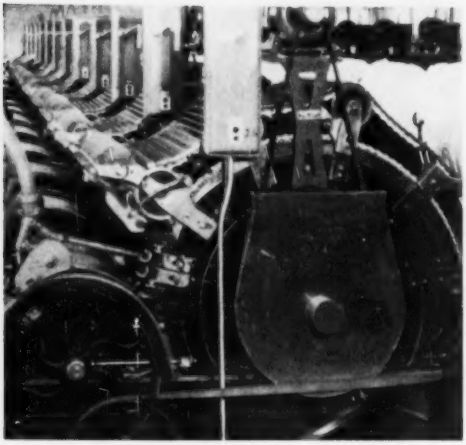
High-Starting-Current Requirements Eliminated by New Card Drive



PACKAGE CARD-DRIVE ASSEMBLY of this type gives better card control, does a more efficient job, and saves 3 in. of width space per card.

An individual V-belt drive assembly for cotton-type cards that drives from a patented "Leveltex" motor pedestal located above the flats, and so saves 3 in. of width per card as compared with a tight-and-loose pulley line-shaft arrangement, is now available from Earnhardt Electric Service, Inc., Box 966, Spartanburg, S. C.

The drive consists of the following component parts and is sold only as a unit assembly:

1 Westinghouse 1½-hp., 1,200-rpm., special-torque, lint-free, sealed-ball-bearing textile-type motor
1 Westinghouse dust-proof combination card controller
1 patented Earnhardt Leveltex card-motor pedestal, adjustable
1 complete V drive
1 switch-mounting bracket and casting
1 guard for cylinder sheave and mounting brackets

The operation of the card drive is simple. The card is started by pushing the start button in the combination control. The card is stopped in a like manner with the stop button. The hinged door of the control has an interlock that makes it impossible to accidentally put the card in reverse.

When the door of the control is opened, it automatically cuts the power off to the motor, and the door has to be in the closed-locked position before the power can be restored. The card is reversed by opening the card controller and turning the handle of the drum switch to reverse, then closing the control door, and pushing the start button.

Other advantages of the Earnhardt card-drive assembly include:

1. Only one card need be stopped at a time for any reason
2. Positive V-belt action
3. No gears or clutches
4. Thermoguard on the motor for heat protection
5. A better looking card room.

Grinding Routine Checked Visually by an Electric Meter

A portable electric measuring device that makes it possible to evaluate the results of a card-grinding job in the mill has been developed by Toyoda Automatic Loom Works Ltd., Kariya near Nagoya, Japan. The evaluating device reproduces the grinding sound on a meter, and any fluctuations in the sound indicate whether and where grinding has been insufficient or badly done on any of the carding components.

The grinding sound generated at the grinding parts of the grinder and the clothing is received by a microphone and is changed into electrical vibrations, which are in turn amplified. Though various noises in the room are also received simultaneously, the grinding sound has a characteristic tone that is especially conspicuous near 3,000 cycles per second; so the amplified electrical vibrations are subjected to a filter, which eliminates sounds over 2,600 c.p.s., and only the grinding sound is picked up. The grinding sound, thus filtered, is again amplified and is shown visually by the indicator of the output meter by means of a vacuum tube voltmeter.

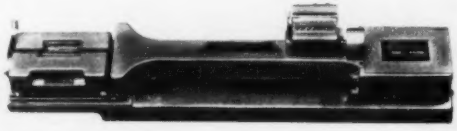
At the beginning of grinding, the output meter shows various indications from place to place on the clothing, and the pointer vibrates. However, at the final stage of grinding, the indications of the output meter present no variations throughout the entire surface of the clothing and become low as a whole. When such a state is reached, grinding should be terminated.

In cases where flats are ground with a cylinder grinder, it is difficult to measure the variations between right and left ends with the device because of the short grinding time, but differences in height among the flats can very clearly be seen on the meter.

Double-Unit Measuring Device Speeds Reading of Yardage

A second new "Trumeter" has been developed by Trumeter Co., 1265 Broadway, New York, N. Y., for measuring piece lengths on continuous-operation ranges in dye houses, finishing plants, etc. The measuring device has an internal clutch that brings one counter into operation while the other counter is standing still. Each piece is measured separately by switching over from one counter to the other when the stitched seam is going through.

The reading for the piece that has gone through can be read off while the other counter is already measuring the next piece, and so on.



CONTINUOUS-RANGE installation and use of Trumeter yardage measurers on pieces going through is now practical with this double unit that alternates measuring and stopping off for reading.

Gaylord Boxes Are Protection in Action

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Through every channel of distribution—from factory to warehouse to retailer, by train, truck or plane—Gaylord quality control and scientifically engineered design assures shipping containers that provide safe delivery of your product.

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Gaylord Boxes

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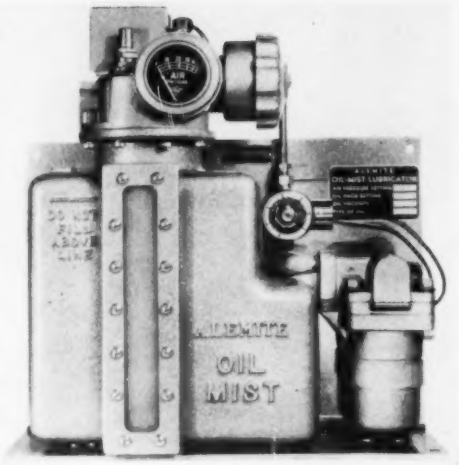
Automatic Warning Systems Simplify Oil-Mist Lubrication

Oil-Mist lubricators with 1-gal. oil reservoirs and built-in automatic warning switches that signal the operator by horn and red light, or shut off the machine as the oil level becomes too low, have been announced by Alemite Div., Stewart-Warner Corp., 1826 Diversey Pkwy., Chicago 14, Ill. Units with 12-oz. reservoirs are also available with built-in warning switches.

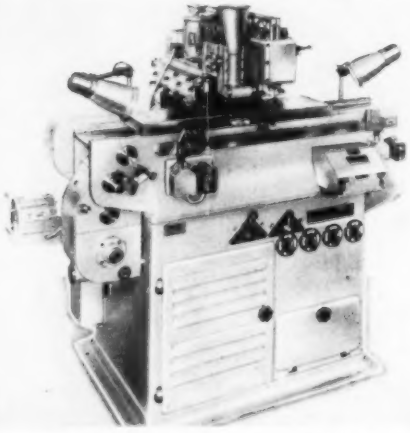
The new models further reduce dependence on the human factor in automatic lubrication. Previous models, through employment of a solenoid switch, gave lubrication when the machine on which they were used was in operation, but had provision only for visual measurement of oil remaining in the reservoir.

Two models of Oil-Mist units with gallon reservoirs are available. One, Model 4958, is wired with a normally open switch that makes contact when the level of the oil goes below 23 ounces. The switch sets off an immediate warning by red light and/or horn. Model 4859 has a closed switch that breaks contact and shuts off the machine when the oil level goes below 23 oz.



OIL LEVELS in the reservoirs on Oil-Mist lubricators now cannot get too low with the built-in warning switches and signal and shut-offs that have been made available.

Needle-Bar Slot Milling Done Quickly and Accurately



CUTTING NEEDLE-BAR SLOTS is an easy procedure with this newly designed German slot-milling machine.

A newly designed slot-milling machine for knitting-machine needle bars, manufactured by George Kesel K. G. in Germany, has been made available to the American market by George Scherr Co., Inc., 200 Lafayette St., New York 12, N. Y. The machine will make needle-bar slots with automatic indexing from slot to slot at a great saving in time and with the close accuracy that is always required.

The bed, with cabinet legs, is of rigid construction and firmly connected to the cutter-head mechanism and the cooling-solution tank. The work table glides on V-shaped guides, well supported over its length. The table has 8 T-slots for fastening the holding fixture for the bar being cut.

Three motors are provided: ¾ hp. for the cutter drive, 1/5 hp. for the cooling pump, and 1/6 hp. for the dividing mechanism.

The dividing lead screw has an accuracy of plus and minus .001 in. The machine is provided with a stroke counter that stops the machine automatically when the desired number of slots is reached.

Specifications of the machine are: length to be milled in one setting, 47 in.; stroke of cutter head, 14 in.; table surface, 14x52 in.; and net weight, 2700 lb.

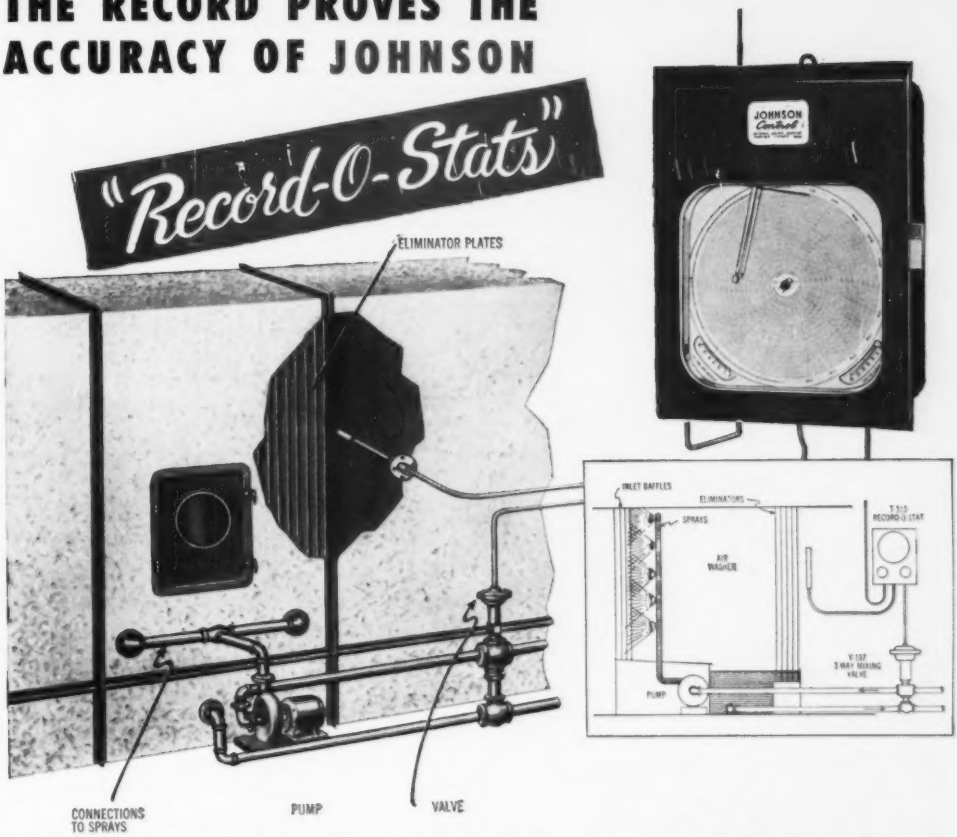
Loom-Bobbin Finish Is Integrated Into the Wood

A new automatic loom-bobbin finish that is virtually indestructible has been perfected by New England Bobbin & Shuttle Co., Nashua, N. H. The finish is applied by coating the entire bobbin with a specially developed resin-base thermosetting plastic to which a catalyst is added for hardening.

Cured slowly, the finish becomes a permanent, integrated part of the bobbin itself, satin-smooth and extremely tough. Threaded bobbins have been exposed, for example, to steam for three consecutive hours without any measurable effect on either bobbins or finish. Consequently, weave troubles such as yarn abrasion and snag due to roughened bobbins are eliminated. The incredible toughness of the finish combined with its smoothness enables the NEB-800, as the bobbin is called, to resist the "crush" and pull of synthetics even when the filling package is nearing the end of its run.

The manufacturer reports that NEB-800's cost less than most enamel finishes and only slightly more than most conventional finishes. The company believes these plastic-coated bobbins will eventually replace lacquer-finish bobbins in many mills, particularly those specializing in synthetics, blends, and high quality yarns, where rough bobbins cannot be tolerated.

THE RECORD PROVES THE ACCURACY OF JOHNSON



The application pictured above shows a Johnson "Record-O-Stat" maintaining a constant dew-point temperature of the air leaving the washer. And, a record of the temperature is always available for reference, which often is an important consideration where industrial processes depend upon space conditions. The Johnson three-way mixing valve, operated by the recorder-controller, insures a uniform temperature of the water which is delivered by the sprays.

Wherever temperatures must be controlled accurately and a record preserved, at the same time, the Johnson "Record-O-Stat" is the finest equipment of its kind. This recorder-controller records the temperatures measured by the bulb on a uniformly graduated chart. Standard charts are available in a variety of temperature ranges and may be had, on special order, in any desired range. On special order, also, the "Record-O-Stat" may be equipped with chart drive and charts to record temperatures for an entire week of operation. These recorder-controllers are available also with two controlling elements and two pens, in a number of combinations to fit special conditions.

The exclusive Johnson features make the "Record-O-Stat" widely adaptable and efficient in imparting proportional (gradual) action to the pneumatic valves or damper operators which it controls. An indicator-controller, for applications where a record is not required, is included in this series of instruments.

ASK FOR BULLETIN T-1000 which describes "automatic" reset and other features obtainable in Johnson "Record-O-Stats". JOHNSON SERVICE COMPANY, Milwaukee 2, Wisconsin. Direct Branch Offices in Principal Cities.

JOHNSON *Automatic Temperature and Air Conditioning* **CONTROL**

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 For more information, write direct or use Reader Service post card.

Controls and Re-Transmits Liquid-Level Data

A new instrument, the ElectroniK inductance bridge receiver, that combines the measurement and control of flow and liquid levels, has been developed by the industrial division of Minneapolis-Honeywell Regulator Co., Brown Instruments Div., Wayne and Windrim Aves., Philadelphia 44, Pa.

The new receiver not only indicates, interprets, and controls flow and liquid level, but data can also be re-transmitted pneumatically to a second receiver, remotely located. An "Indexet" mechanism is available to reset the control index from a remotely located transmitter.

Accurate to within ½ of 1% of full scale, the panel-space-saving instrument combines the inductance bridge transmission system with the Brown "Continuous Balance System" for power positioning of the recording pen.

The new instrument, easily installed, does not require any special provisions or extra equipment. It can be used with any of the Brown electric flow or motion transmitters.

Powered Hand Truck Is More Powerful, More Maneuverable

LOW-LIFT WALKIE TRUCK of 4,000- to 6,000-lb. capacity has a new increase in power accomplished with a decrease in overall length, according to Lewis-Shepard Co., Watertown, Mass., the manufacturer. Called the L-S Jacklift Electric, the new truck is the fifth in a series of newly designed lines.

The new truck gives twice the power in 15% less headroom than former models. Greater power is thus provided for ramps and grades, while the amount of space needed by an operator for maneuvering has been reduced. Other features are (1) all controls in the handle head; (2) all controls operable in any position, including the vertical; (3) instant, cushioned braking on release of the "trigger" in the handle; and (4) timed acceleration to eliminate jerky starts.

(Continued on page 268)

Another Year of New Equipment Classified and Reviewed Next Month

▶ During the past year several hundred new pieces of textile-mill equipment and supply items have been put on the market. Many of these items are already proving themselves commercially practical and advantageous—costwise, productionwise, and/or qualitywise—for those mills that have had the foresight to try them out.

▶ A great number of textile men appear to be happy over the chance each November of re-assessing in one spot, and by area of mill activity, all the important new textile-equipment items that have appeared in these pages over the last 12 months. Consequently, the same type of review that was given a year ago will be provided next month, with only items new since October, 1951, to be carried.

▶ The new equipment and supplies will be grouped under one of the following 10 headings:

1. Yarn Preparation
2. Twisting, Winding, Warping, Slashing
3. Weaving
4. Knitting
5. Wet Processing
6. Materials Handling
7. Waste Handling, Accessories, Supplies
8. Regulating, Controlling, Measuring, Testing
9. Air Conditioning and Heating
10. Power Generation and Transmission

▶ The regular TW estimate of mill expenditures for new plants and equipment during the current year will also be an integral part of the November-issue review.

NEW *Dyes* AND *Chemicals*

New Aniline Salt Has pH Control, Better Solubility

Aniline salt crystals of high purity, with pH controlled and with better solubility, have been offered by Calco Chemical Div., American Cyanamid Co., Bound Brook, N. J. The company claims that the new product produces a black with outstanding intensity and bloom, even under artificial light. Because of its purity and low cost, the product offers economy of application.

Silk Oils Soften and Lubricate

Two new silk soaking oils are now being marketed by Dexter Chemical Corp., New York 59, N. Y.

Dextrol Silk Oil #42, designed to soften the silk gum in preparation for winding and throwing, forms an emulsion that exhausts on the silk, according to the company. It is used in standard silk-soaking equipment.

Dextrol Silk Oil #84 is said to be particularly satisfactory for Duoppioni silk and has excellent stability. Active ingredients exceed 85%.

New Latices Tailored For Stabilization Ease

Two new latices of interest to textile converters and other chemical processors have been developed by Goodyear Tire & Rubber Co., Akron, Ohio.

The new products are designated as Chemigum Latex 235BHS and Chemigum Latex 245CHS. The 235BHS adds a high-solids, minimum-stabilized latex to the 235 series of butadiene-acrylonitrile copolymers. The new 245CHS adds a high-solids, anionic-stabilized copolymer to the 245 series.

Requirements of textile converters can now be met with a latex tailored for their particular needs because of availability of three different stabilization systems: ammonia soap, synthetic anionic, and minimum stabilization in both medium- and high-acrylonitrile-content latices.

New Lightfast Directs Good for Cross-Dyeing

For dyeing cotton and rayon, Interchemical Corp., Textile Colors Div., Hawthorne, N. J., has a new line of fast-to-light direct dyes known as Arilite dyes. These dyes are said to have excellent penetrating and leveling properties. Because they have no affinity for acetate, they are useful for cross-dyeing rayon-acetate blends. Fabrics dyed with the new colors require no special aftertreatment.

Arilite dyes designated by the letter *U* are particularly valuable for dyeing fabrics to be later treated with resin finishes. Shades produced with these dyes are said to exhibit minimum change when treated with resin finishes. Lightfastness before and after resin treatment is outstanding. Washfastness after resin treatment is improved, the makers claim.

Wool Yellow Is Fast to Sea Water

Supranolechtgelb 4G (super-fast yellow) that has a clear green-tinted color is offered by Farbenfabriken Bayer, Leverkusen, Germany. The dye is said to have a particular fastness to sea water and perspiration. It is therefore especially applicable for woolen yarns utilized for sport and bathing apparel.

Friend or Foe?

Any lubricant a textile manufacturer uses can be either friend or foe. It will save him money and step up production... or ...waste his dollars and hold up production.

Cities Service Textile lubricants are specifically designed to help increase production on all textile machinery . . . designed to assure you cleaner machine bearings and shafts, and cleaner finished goods, too.

Eliminate wasted time and money . . . Keep production at maximum . . . Use Cities Service lubricants. When you have a lubricating problem, call in the Cities Service Lubrication Engineer. He can help you. Write Cities Service Oil Company, Dept. J38, Sixty Wall Tower, New York City 5.

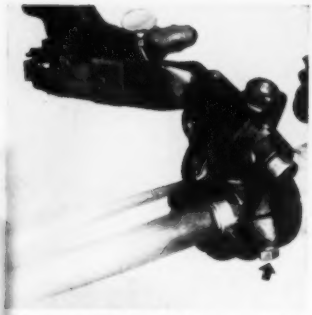
CITIES SERVICE

Quality Petroleum Products

THIS IS NO. 95 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation



The cone holder bearing should not be too tight on the bearing sleeve. Adjust with the screw indicated by the arrow in the illustration.

Lubricate the cone holders only according to the recommendations. This will provide more satisfactory operation.

Paper cone with velvet finish restored to upper half of cone. The hard finish on the lower half will cause some yarns to scramble.

PREVENTING SCRAMBLED YARN Roto-Coner*

Here are three things you can do to prevent yarn from scrambling on the surface of the paper cone when you first start winding a package on the Roto-Coner.

1. Keep all cone holder bearings adjusted so that the paper cone will have the proper frictional contact with the Rotary Traverse.
2. Use only the specified lubricant in the cone holder.
3. When using velvet-finish paper cones, inspect them to be sure the finish hasn't worn off.

Bearing Adjustment. If the cone holder bearing is set too tightly the paper cone may not make a firm contact with the Rotary Traverse. The bearing should be adjusted to a point which will allow the cone holders to drop freely but gently onto the traverse and begin turning immediately upon contact, especially at the start of the package.

Lubrication. We recommend a lubricant with a Standard Universal viscosity of 250–300 seconds at 100° F., for use in the cone holders. Our engineers have found that lubricants meeting these specifications provide the most satisfactory condition. Lighter lubricants may leak out of the cone holder. Heavier lubricant than the one recommended may retard the cone holder and cause the first few layers of yarn wound to scramble and pile toward the nose end of the paper cone.

To correct such a condition, the cone holder should be removed from the spindle and soaked for at least a half hour in a solvent, to dissolve the hard grease. The grease chamber in the cone holder should be cleaned thoroughly with compressed air or a brush.

Then the cone holder should be lubricated correctly as recommended above.

Paper Cones. When velvet-finish paper cones are used over and over, the velvet finish finally disappears. When this happens, they are no more effective than cones with ordinary smooth-finish surfaces, and the first few layers of yarn will scramble. On yarn packages being used as a knitting supply, these scrambled layers may shell off the cone when the supply is about to transfer.

Unsatisfactory cones should be replaced. If temporary action must be taken, the finish can be restored by rubbing fine sandpaper over the surface of the cone. The best way to do this is to hold the sandpaper against the cone while it is revolving rapidly on an arbor. The end spindle on the Roto-Coner can be used for this purpose, providing the end bearings are covered to protect them. However, it is much better to restore the finish to the cone on a fixture located some place other than the winding area.

*Reg. U. S. Pat. Off.

23.2.13

September, 1952

WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA CHICAGO LOS ANGELES MONTREAL and HAMILTON

LETTERS FROM OUR READERS

Address all communications to:
Editor, *Round Table*, TEXTILE WORLD
330 West 42nd Street, New York 36, N. Y.

Round Table

REPLY TO "OLD ARGUMENT"

Dear Editor:

The "Old Argument" re universal numbering systems in "Round Table" discussions in your August, 1952 issue reminds one of Mark Twain's wisecrack about the weather. "Nobody does anything about it."

The Grex system—with variations—is being pushed forward by these national groups, which could be designated "Grex International," namely, ASTM, BTI, and the Textile Technical Federation of Canada. The first favors one-scale units, the second three scales, and the third two scales.

The rank-and-file members of these three societies have not been consulted about the recommendation of the Grex system for universal adoption. The Canadian group, of which I am a member, has dodged discussion and ducked debate on this important question for a period of over five years.

What is needed before any recommendations are made is a full, free and frank discussion in all three countries. The men who make and deliver the goods should decide this question. No practical cotton carder would agree to the Grex system, which would designate a 16-oz. cotton lap as number 4,960,587. The Grex system is the denier system decimalized by changing the length unit of 9,000 meters to 10,000 meters. The integral system is the Typp system rationalized, 1,000 yards increased to 700,000 yards. It takes a tip from Typp.

Textile publications could do a great deal to clear the air if they would give equal space to all proposed numbering systems. For instance, Magazine A gave 64 column inches, or 2,240 sq. in. of space to the integral system; Magazine B gave 78 column inches, or 1,950 sq. in., and TEXTILE WORLD gave 4 column inches, or 9 sq. in. to the same system, while the Typp and the Grex have been given pages and pages of publicity.

How are the men in the mills able to judge the merits of all the proposed numbering systems if one is almost blacked out while the others are given searchlight publicity?

The Typp system fails because its length unit, 1,000 yards, is too short, making it a reciprocal system. The Grex system fails because its weight unit, 1 gram—15.432 plus grains—is too heavy, thus giving size numbers that are too high to be practical.

SQUIRE BLACKSHAW

Montreal, Que.

ECONOMICS—SIMPLIFIED

Dear Editor:

America's neighbor to the north is being pointed to as an object lesson for this country in successful efforts to balance the national budget, reduce the national debt, and curb inflation, all without the dubious benefits of price controls.

Canada curbed inflation by a pay-as-you-go policy that met a 50% rise in government costs through the device of increased taxes on spending in the form of sales and excise taxes, by credit restrictions, and by raising interest rates to bring the flow of spending into better alignment with the stream of goods and services.

While the great productive capacity of the United States has been hampered by all the uncertainties, confusion, costly red-tape administration, discriminations and labor strife generated by price and wage controls imposed by government, Canada rejected these procedures at the outbreak of the Korean war.

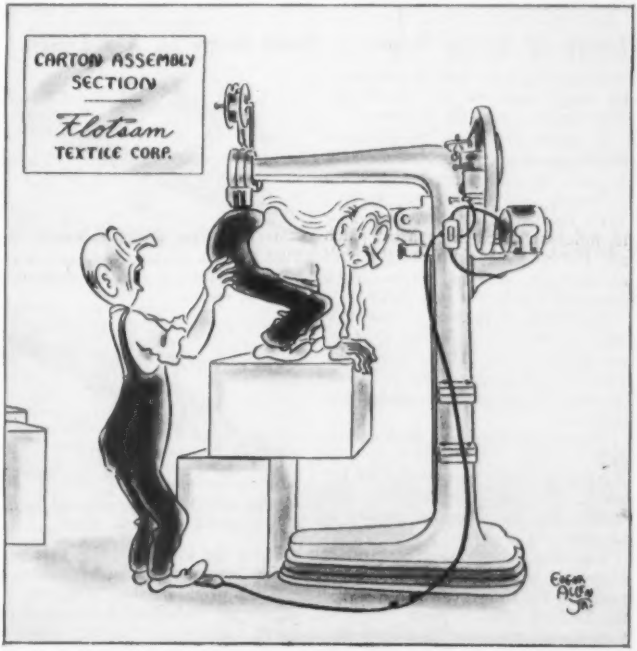
Canada has succeeded so well by these simple proceedings that it is now able to begin reducing some taxes.

Canada has had a budget surplus every year since the war, and between 1946 and 1952 it cuts its national debt 17%.

The rise of the Canadian dollar to $1.03

(Continued on page 216)

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*



"Stop crabbing! Realize what a tailor would charge to stitch up the seat of your pants?"

Kinks AND SHORT-CUTS

Remove Precision Let-off With a Jack

CHANGING LET-OFFS is easy with this jack, altered in our own machine shop.

When we had a let-off break or had to remove it for wavy cloth or some other reason, we used to have to drop the warp beam on a dolly truck to remove the let-off. We often let crepe warps roll up when we removed the beam. On warps other than crepe, we always made a bad set mark.

We now use an automobile jack set in a special base when we have to remove a let-off.

The base is made from ¼ x 2-in. angle iron welded to form a small bottomless box. The base is just large enough to hold the base of a short screw-type jack.

Wheels of 1½-in. dia. are fastened to tapped holes in the base for the jack.

A ¼ x 2-in. piece of steel 12 in. long is bent to fit the beam flange. A ⅛ x ½-in. piece of strap iron is bolted or welded near each edge of the concave surface of the 2-in. steel. The center space that is left on the 2-in. strip should fit the beam flange snugly. The center of the convex surface of the 2-in. steel is welded to the top of the jack. When it is necessary to remove a let-off, the jack is placed in the base and set directly under the beam flange on the let-off end. The jack is raised a short distance, the collar on the beam shaft is removed, the weights are removed, and the jack is rolled toward the beam-bearing support on the drive end of the loom until the beam is against the beam bearing.

The let-off is removed from the loom and a new let-off is put on.

Since we have been using the jack, we can change let-offs quickly without leaving set marks in the cloth. *B. F. Blackwell, Greenville, S. C.*

Improved Binder Replaces Checkstraps on X-2 Looms

We changed our binders so that we no longer have to use checkstraps. The binders check the shuttles.

A section two-thirds the thickness of the wood is cut from the binder. A patch is made from hardwood to fit loosely into the cutaway section. With the patch in place, two 7/32-in. holes are bored through the patch and the binder 2½ in. from the ends of the patch and in the widthwise center of the binder and patch.

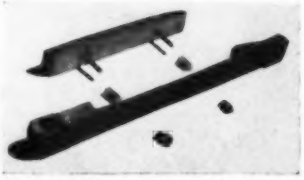
The patch is removed and counterbored at the outside surface to recess the head of a ¼-in. square-head bolt. The bolt is driven into the hole with the head seated in the counterbored surface.

The binder is rebored with a ¼-in. drill.

After the bolts are inserted in the patch, the patch is covered with leather just as a regular binder is covered.

Two small compression springs are placed on the bolts, and the patch is placed in the binder. A nut and lock nut hold the patch in place.

As the shuttle enters the shuttle box, the springs are compressed and stop the shuttle.



TWO SPRINGS, two bolts, and four nuts are all that is needed to make this binder from a regular one.

BINDER CHECKS the shuttle—no checkstrap is needed. The binder floats.

Since the binder surface that was not cut away retains the leather covering, the patch and the binder are in alignment when the shuttle is fully boxed.

We're saving on checkstrap costs. *Roberto Herrera, Chile*

Add Blue to Worsted Grays To Prevent Tinges of Yellow

One of the things that the worsted spinner producing gray mixtures must avoid is a yellowish tinge. Most people do not like to see this type of gray mixture, and if the white used in the blend has a tendency to be yellowish in color it is impossible to produce a good gray.

One way of overcoming this condition is to use a blue-black in the blend to counteract the yellow tinge.

If a straight black is dyed, the addition of a little blue will help produce a better shade.

A typical gray mixture might be produced as follows:

Black	30%
Navy blue	10%
White	60%

In place of the navy blue, a lighter blue could be used to give more life to the gray mixture:

Black	20%
Light blue	5%
White	75%

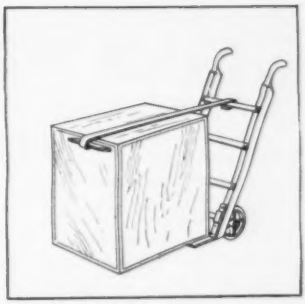
When adequately blended, the blue is not noticeable but subdues any yellow tinge.

Box Hoisting Can Be A One-Man Job

It used to take two men to get a heavy box hoisted onto a hand truck in our plant—all because the man with the truck couldn't manage his truck and reach over to tilt the box onto the truck at the same time. We attached an arm to the hand truck so that one man could do the job.

The arm, made from ¼x2½-in. flat iron stock, is as long as necessary to reach over the box you want to handle. One end is curved to fit around the top rung of the truck, and the other end has another piece of stock welded or bolted at a 45° angle. This angled piece grips the box edge securely to prevent slippage. You can slip the arm off after the box is in carrying position, or you can leave it in place to assist in letting the box down when you unload.

We believe that this little gadget not only eliminates the need for a second man but also makes the one man's job easier. *Robert E. Bitgood, Hope Valley, R. I.*

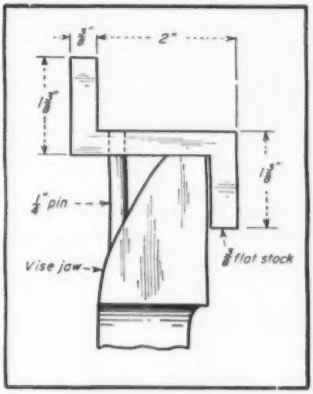


AUXILIARY ARM for hand truck pulls boxes over for you after the lip of the truck has been pushed under the box.

How Your Vise Can Do More Work

Some of our fixers complained that their vises would not hold securely the larger machine parts that they had to work on. We had our blacksmith hammer out a pair of extension jaws for each vise. These extensions were made as long as the width of the vise jaws.

A ¾-in. pin is driven into a drilled hole at each end to rest against the back of the vise jaw. One of these extensions is used on each vise jaw, and this attachment increases the capacity of the vise by 3¼ in. These extensions can be made of greater width if required for larger work.



EXTENSION JAWS increase capacity of vise and enable it to handle large machine parts.

Wet Out Polyvinyl Alcohol To Get a Workable Solution

Polyvinyl alcohol, used in a lot of finishing mixtures for rayons, often presents a problem in mixing.

The material is received at the mill as a dry powder, but stock solutions tend to form gummy balls that defy stirring.

Dry polyvinyl alcohol can be wet out with denatured or methyl alcohol (about four gallons per 50 lb. of polyvinyl alcohol). A solution free of undissolved materials can then be made by adding the necessary amount of water and heating to 160 to 180° F. with live steam, which provides sufficient agitation to produce a good solution. *R. W. Pinault, Ware Shoals, S. C.*

$500 for Best Kink in 1952
$25 for Best Kink Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know many Kinks and Short-Cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your Kink may win the $500 check for the best Kink of the year or the $25 check for the best Kink of the month; maybe both!

Send in your Kink now. There is always a contest going on. The more good Kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every Kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it—we will pay you extra if you do and we can use it.

Look over the Kinks in this and other issues. You will get ideas you can use as well as inspiration for Kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

Your published Kink will be judged impartially by other mill men. In cases of ties, duplicate prizes will be awarded.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1952.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final.

Send kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. COFFEE ST., GREENVILLE, S. C.

Here's a Better Method for Handling Cotton Samples

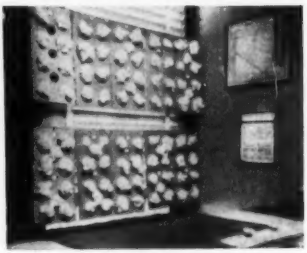
Pieces of ordinary corrugated cardboard can be used in the cotton-classing room to prepare samples for the testing laboratory.

The advantages of using cardboard are that it is:

1. Very inexpensive (As a matter of fact, we use the pieces that come in cartons of coned yarn—the holes are already in them.)
2. Space-saving
3. Good for conditioning

Our boards measure 8¾x17¼ in. There are 8 or 10 holes 1¼ in. in diameter in each board. We put a reinforced hole in the center of the top side of the boards and hang the boards on hooks spaced along a strip of wood. The strip itself is fastened across a window that is never opened, and we thus use space that would otherwise be wasted.

The cardboards are numbered for identification, and each hole is also numbered. Hole numbers can be for your convenience. For instance, you may want two samples from each lot; if so, you'd have two holes with the same number.

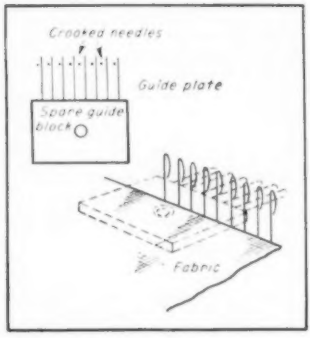


PIECES OF CARDBOARD hold samples of cotton in 1½-in.-dia. holes. The arrangement is neat and inexpensive.

Samples that fit into the holes are large enough for all the tests we do —fineness, strength, and length—plus a couple of extra 50-grain fineness samples for reference.

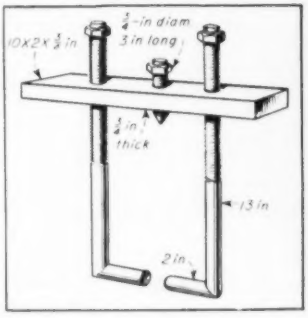
We have about 40 boards, and we use them in rotation. *G. B. Papai, Los Angeles, Calif.*

Our Quick Check for Crooked Tricot Needles



SPARE GUIDE BLOCK, ordinarily 1 in. wide, is held at the level of the needle tops to determine which needle is crooked. You can tell at a glance by the uneven spacing of crooked needles.

Pulley Puller



CHANGING PULLEYS has become an easy job since we started using this time- and labor-saving device. We use it on spinning frames, but it'll work for any pulley—just alter the dimensions to fit your pulleys. All you have to do is put the puller in place and turn the center screw—the pulley comes right off. *R. C. Ward, Columbus, Ga.*

How To Repair Worn Threads

Worn threads can be repaired easily if you:

1. Make a wooden nut and screw it on the threads to clean them
2. Fill the threads with iron cement
3. Screw the wooden nut on again
4. Remove the nut
5. Clean the threads and dust with graphite
6. Screw the nut on again
7. Let the cement harden

When you remove the wooden nut, the threads will be as good as new. *W. E. Warner, Essex, England*

How To Figure Size For Rayon Slashing

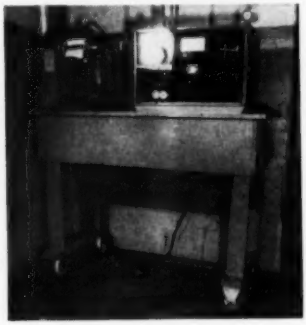
In a mill weaving rayon fabrics of various constructions, it is sometimes a problem to know how much warp size to make up to slash a set and have the least amount of waste at the end. The following formula has been found helpful in calculating this quantity, especially when a new style comes along. The calculation is easily done on a slide rule.

Theoretical gallons of size required

$$= \frac{AxBxC}{4{,}464{,}528x8.33}$$

A = Denier of the warp yarn
B = Yardage on one warper beam (cotton system)
C = Number of ends in a loom warp

The same formula is applicable to acetate if the result is multiplied by 0.6. The theoretical figure should be increased enough to allow for filling the size pan and also to allow for leakage. *N.S.B., Chelmsford, Mass.*



STANDARD CONDITIONS mean nothing to this Uster tester. The unit, seldom in the laboratory, is wheeled from one department to another and is operated under mill conditions.

Uster Tester Is on Wheels

Our mill is pretty well spread out, and it used to be a major task to bring samples to the Uster tester in the mill laboratory.

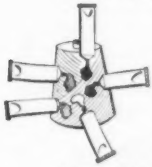
We thought we'd try putting the tester closer to the samples. The two Uster units were on a table in the lab, so we just put some big casters on the legs.

Now we leave the tester in each part of the mill long enough to do the tests. The results: fine, so far. We don't have any trouble with the tester, test results are just the same, and we've got lots less carrying to do.

Celanese introduces...

CELAPERM*

a color-pigmented filament acetate yarn with the consumer acceptance of the Celanese trademark*



In the past season color-pigmented yarns have assumed considerable importance in the styling and merchandising of textiles. Many of the new high-style effects in men's and women's apparel fabrics have utilized their special properties. In home furnishings they offer new standards of color fastness.

Celanese, aware of the problems as well as the virtues of color-pigmented yarns, has been working for several years to perfect processes that would deliver a high quality yarn in a wide range of colors and deniers.

The result is Celaperm, a color-pigmented filament acetate yarn which will have very wide application.

Celaperm has been tested for color fastness to home laundering, dry cleaning, bleeding and crocking, perspiration and salt water, sunlight and gas fading. Accelerated tests on ten Celaperm colors showed no appreciable color change.

To produce Celaperm, Celanese has developed special purpose machinery and methods which are believed to be the most advanced in the field. We are now ready to quote delivery of Celaperm in a range of basic colors and in suitable deniers and packages.

Celanese believes that color-pigmented yarns have a permanent place in modern textile production and we are therefore planning to produce Celaperm in an increasingly wide variety of seasonal colors, sizes and packages. We are particularly interested in supplying mills on a continuous basis.

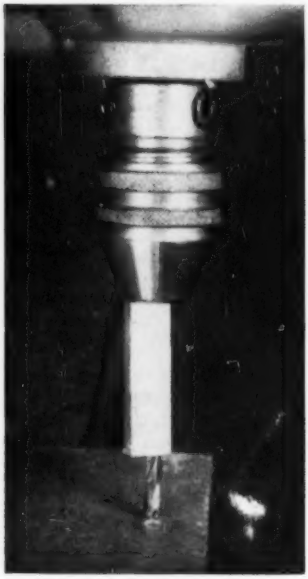
Where fastness and beauty of color are prime considerations, look to Celaperm.

Celanese Corporation of America, 180 Madison Ave., New York 16.

Celanese* **ACETATE, one of the world's great textile fibers**

*Reg. U. S. Pat. Off.

Simple Drill-Depth Stop Prevents Damage

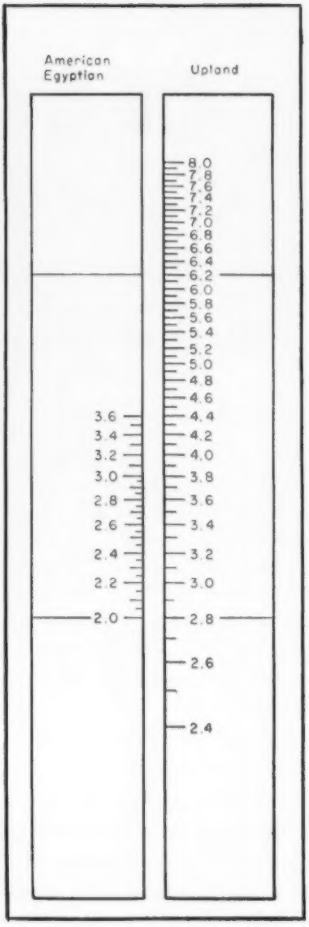


PIECE OF WOOD doesn't let the drill go any deeper than you want it to.

In our maintenance shop we make up a lot of prototype machines and fixtures to help production, and one job that recurs constantly is the drilling of holes in sheet aluminum. We try to keep the sheet in a polished condition, but often the drill penetrates the sheet unexpectedly and the revolving drill chuck scores the surface.

This trouble has been overcome by using short pieces of soft, close-grained wood as simple depth stops for the drills. Before drilling, we decide how far we want the drill to penetrate and then drill through the piece of wood that has been cut off to the required length. The piece of wood stays on the drill and acts as a combined depth stop and buffer, which in contact with the polished sheet surface does not score it in any way.

When thin sheet metal is fastened to wooden frames with small screws, it is not advisable to allow the drill to penetrate the wood, as there would be too large a hole in the wood for the screw to cut its thread. Depth stops as shown can be arranged to penetrate the metal only and to make only a small dimple in the wood underneath. *Clifford T. Bower, London, England.*



Best-Kink Award for August

East month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for August, according to TEXTILE WORLD reader-judges, was:

"Roll-Unweighting Levers Easily Lift Spinning Saddles"

C. L. Hall, Bon Air, Ala.

Mr. Hall is being sent a check for $25 with the compliments of TEXTILE WORLD.

Fiber-Fineness Scale for American Egyptian Cotton

A Micronaire fiber-fineness scale for American Egyptian and other extra-long-staple cottons of similar fiber characteristics has been developed by the Production & Marketing Administration, U. S. Dept. of Agriculture.

Testing techniques, including the weighing and preparation of the sample, are the same for both upland and American Egptian cottons. The scale developed specifically for each type of cotton should, however, be used only for the cotton for which the scale was developed. Both scales have a separation of 4 in. between master gauge marks, and both are to be used with an instrument air pressure of 6 lb.

Use of the scales means that fineness can be read directly—you don't have to take readings and look up fineness on a chart.

LINEAR FINENESS SCALES, developed from curves, are now available for American Egyptian as well as upland cotton. Scales are for use with the Micronaire. Sample weight in both cases is 50 grains, and all figures are in micrograms per in.

Two Ways To Get Larger Tapped Holes

If a tap is worn, or if the screw to be used is a little big, it may be necessary to make the tapped hole a little larger. Here are two methods:

1. Tap the hole, remove the tap, and tap again with the spaces between the cutting flutes of the tap filled with cotton waste. The waste will be drawn between the cutting edges of the tap and the metal being threaded, and the hole size will be increased.

2. Tap the hole, remove the tap, dip the tap in boiling water, and tap again. The heat will expand the tap so that it will cut an oversize thread, if the tap is kept hot.

Use Cellophane Tape When You Dissect Fabrics

Ever lose pieces of yarn when you were dissecting a small sample?

You can do the job more neatly and never lose a single piece if you stick a piece of Cellophane tape across each edge of the sample.

Not only do you have the advantages mentioned above, but you also have the entire sample preserved on a single sheet of paper.

NEW MATERIAL FOR THREAD GUIDES!

AlSiMag® 513

9 on Mohs' Scale...HARD...STRONG...Resists wear and chipping...Maintains original finish LONGER!

For the past three years AlSiMag 513 Thread Guides have been tested in a number of leading textile mills. They have been run in every day production on a variety of the most difficult applications we could find. The announcement of this material was delayed until adequate practical experience in various mills had completely confirmed our laboratory tests. Thus, though this is a NEW material it is THOROUGHLY TESTED and PROVED SUPERIOR.

After three years of
practical tests
in leading textile mills
AMERICAN LAVA
CORPORATION
proudly announces
AlSiMag® 513

GOOD NEWS ON PRICES, TOO! In most designs, AlSiMag 513 Guides (pink in color) can be obtained for the same prices as the famous AlSiMag 192 Guides (Cream colored).

MECHANICAL PROPERTIES
AlSiMag 513

Density		
Porosity		
Modulus of Rupture		
Hardness		
Compressive Strength		
Tensile Strength		
Resistance to Impact		

See this newest material at BOOTH 504
17TH SOUTHERN TEXTILE EXPOSITION
TEXTILE HALL, GREENVILLE, S. C.

51ST YEAR OF CERAMIC LEADERSHIP

AMERICAN LAVA CORPORATION

CHATTANOOGA 5, TENNESSEE

OFFICES: METROPOLITAN AREA: 671 Broad St., Newark, N. J., Mitchell 2-8159 • CHICAGO, 228 North LaSalle St., Central 6-1721
PHILADELPHIA, 1649 North Broad St., Stevenson 4-2822 • LOS ANGELES, 5603 North Huntington Drive, Capitol 1-9114
NEW ENGLAND, 1374 Massachusetts Ave., Cambridge, Mass., Kirkland 7-6498 • ST. LOUIS, 1123 Washington Ave., Garfield 4959
SOUTHWEST: John A. Green Co., 6815 Oriole Drive, Dallas 9, Dixon 9918

Safe Shop Ash Tray

TWO FLOWER POTS, plus a little water, make an effective ash tray.

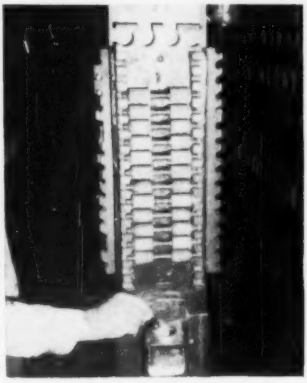
With the idea of keeping the maintenance staff happy, the ban on smoking in our maintenance shop has been lifted.

Naturally, some of our executives, particularly the nonsmokers, feel jittery about the danger of fire.

We devised a fireproof ash tray that effectively snuffs out any cigarette butt dropped into it. The first cost is low; and it is a heavy ash tray that is not easily knocked over, has large capacity, and therefore is not always in need of emptying. Another advantage is that lighted cigarettes do not lie firmly on top (despite what the picture shows) and tend to roll off into the wide rim surrounding the base of the ash tray.

The ash tray is made of a small flower pot that stands inverted in a shallow earthenware bowl commonly used for planting bulbs. A little water in the bowl effectively extinguishes any cigarettes dropped into it. Burning butts dropped into the central hole in the flower pot do not smoke because of the water seal in the bottom.

Spare-Roll Holder Has Gauges and Grease Can



SPARE SPINNING ROLLS are kept handy to our fixers with this roll rack mounted on a post between two spinning frames. As can be seen in the picture, there are two empty racks for used rolls on the sides of the post. Another rack of unused rolls, similar to the one shown here, is fastened to the back side of the post.

When a fixer needs a new roll to replace a damaged one, he places the damaged roll in one of the side racks and takes one of the unused ones. First, he checks the size of it in the round gauge holes at the top of the rack. Then he dips each end of the arbor into the grease cup (made from an old traveler can) at the bottom of the rack, as shown in the picture. He smooths the grease on the roll ends with his finger and spreads a little grease on the middle of the arbor where the roll saddle works. Then he puts the new roll on the frame. *C. L. Hall, Bon Air, Ala.*

We Turn Endless Checkstraps and Have Doubled Their Life

We like endless checkstraps, but like slotted checkstraps, they always break on the power stroke.

We decided to turn the straps around every month in an effort to make them last longer. We soon saw that the straps lasted longer when they were turned around.

We now turn the straps every month. The first week in each month the loomfixer turns one-third of the straps on his section. He turns a few of the straps each day and completes the job in five days. We break the job down into days because the shuttle boxing is disturbed and the friction finger sometimes has to be reset when the straps are turned.

To turn the straps, the loomfixer uses his hands and does not loosen the friction fingers with a wrench.

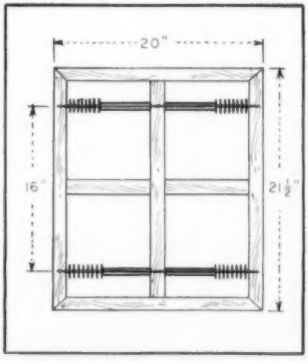
After more than a year of turning the straps, we find that our checkstrap life has been doubled.

Big Worsted-Roving Cans Have Harness-Chain Wheels

A short time ago we increased the size of our gill-box cans to 20x20½x 41½ in. The new cans, made of fiber board, hold about 22 lb. of stock, and our operators found that moving them around was a hard job.

We made rollers for the cans from harness-chain bars. The bars, cut 18 in. long for us, ride in holes we drilled on 16-in. centers in the bottom support along the longer side. There are eight rollers at each of the four corners—kept out at the ends of the bars with lengths of ⅛-in. pipe.

Now the operators move the cans around with ease. The rollers lift the can only ⅝ in., so dirt is pushed ahead and does not clog the rollers. *Charles Gillooly, Providence, R. I.*



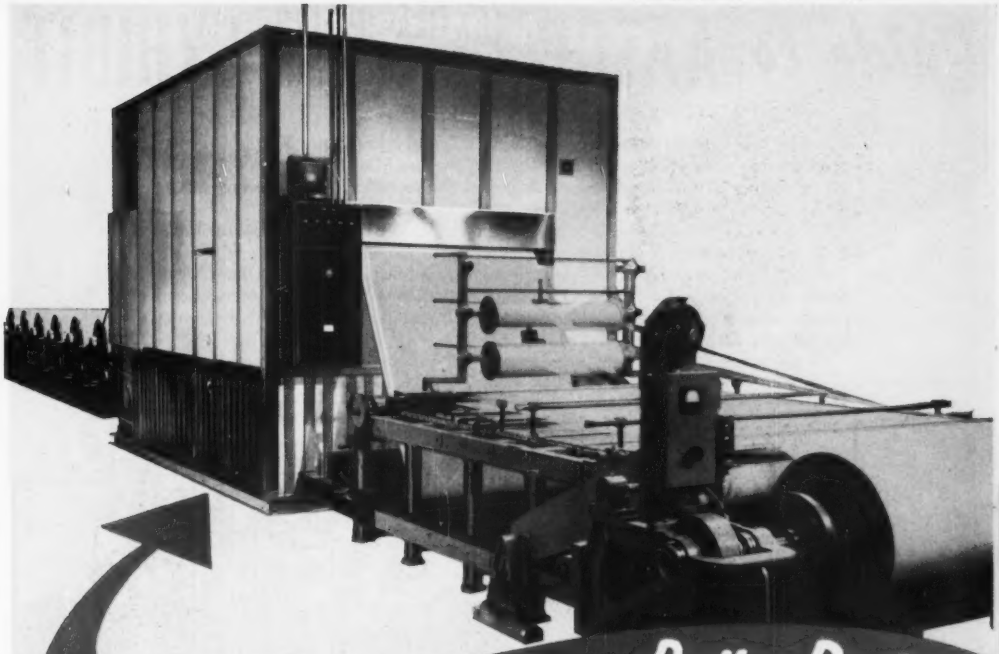
EIGHT ROLLERS at each corner lift this gill-box fiber-board roving can about 1/32 in. off the floor to make for easier handling.

Wash Your Own Blinds

Venetian blinds must be washed thoroughly at least twice a year. In most places the charge is rather high ($6.90 per window in this area).

We had a bracket made to hold a blind. The blinds are taken down and put up, one by one, on this bracket. We wash them with a garden hose and a long-handled brush, and then put them back on the window.

The bracket can be erected either indoors or outside, wherever water is available and can be drained off easily. *H. A. Concannon, Ashton, R. I.*



Help Your Looms Weave Better Profits

with Uxbridge *Gentle-Air* Warp Drying

Our Gentle-Air Slasher Drying units give considerably greater production than the various types of cylinder machines they are replacing in many mills.

Drying is done by passing heated air gently through the yarn — completely eliminating cans and thus reducing explosion hazards to a minimum. Since yarn is 60% to 70% dry before any contact is made with rollers inside drying box, roll laps are practically non-existent. Yarn remains soft and round, resulting in more perfect fabrics, greatly reduced occurrence of profit-devouring seconds.

These revolutionary Gentle-Air fast drying units will operate in conjunction with the front and back ends of any conventional slasher — new or old. Have us send you descriptive bulletins, without obligation.

SEND FOR:
Bulletin A: Maximum Production Model, from 1250 up to 1780 lbs per hr.
Bulletin B: Normal Production Model, up to 750 lbs. per hr.

AT YOUR SERVICE. Our Engineering Department at Uxbridge will gladly study your slasher room problems, and consult on ways to increase and improve production — at no obligation to you. We guarantee there will be *no sales follow-up* unless you specifically request it.

Just notify us to have an Engineer call at your convenience.

BACHMANN **UXBRIDGE** WORSTED
CORPORATION
UXBRIDGE, MASSACHUSETTS

Representatives:
South—Ira L. Griffin and Son, P. O. Box 1576, Charlotte 1, N. C.
New England & Canada—James H. White, 40 Crystal Ave., Derry, N. H.
South America—Quimanil S/A, Anilinas Representacoes Matriz, Sao Paulo, Brazil

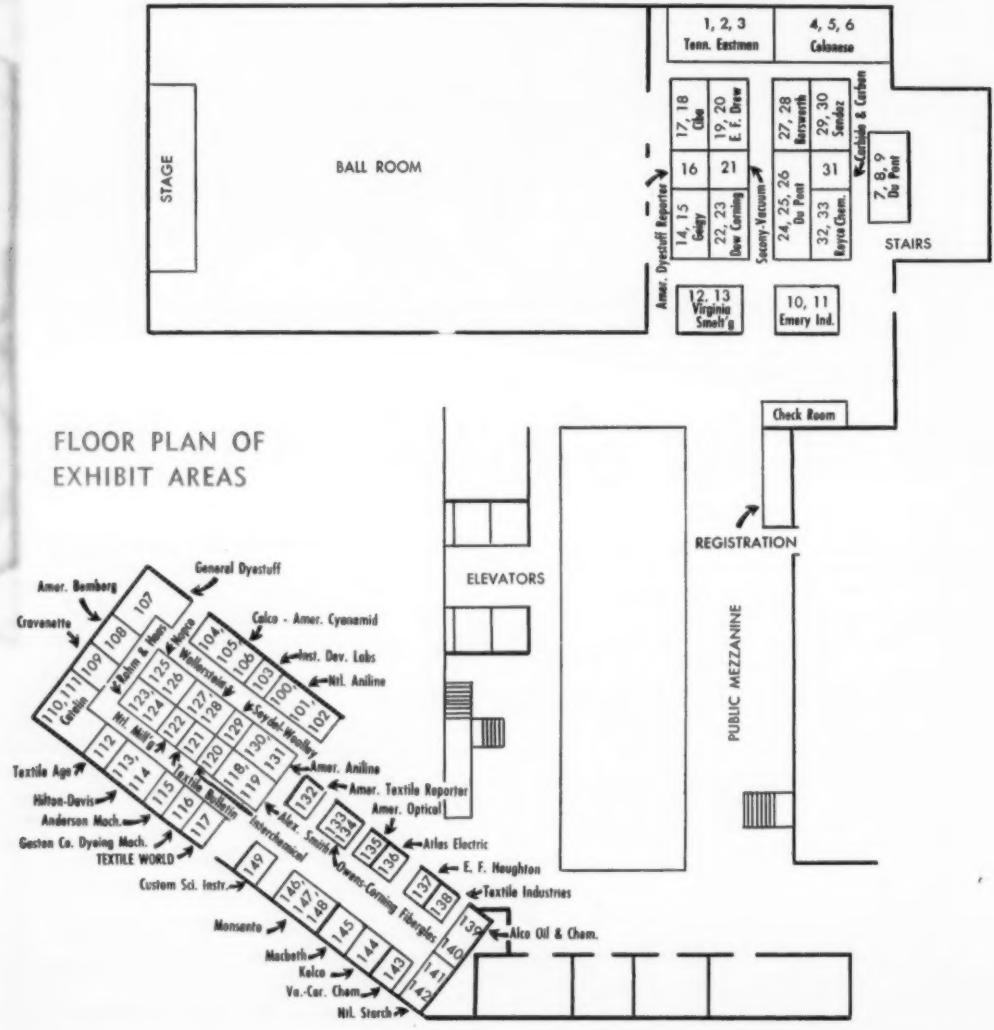
More warps & Better warps

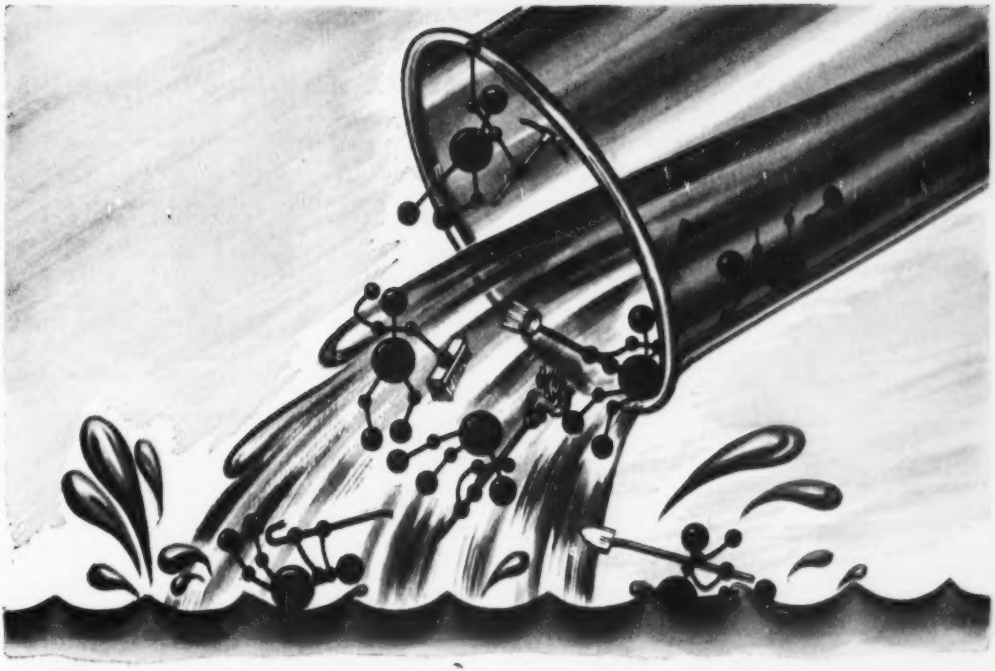
Guide to AATCC TEXTILE DYEING AND FINISHING EXHIBIT

The 31st national convention of the American Association of Textile Chemists and Colorists will be held at the Hotel Statler, Boston, Mass., November 6, 7, and 8. All exhibits will be located on one floor and the technical paper sessions will be held in the main ballroom.

TEXTILE WORLD is located in Booth 117. We extend a cordial invitation to all visitors to stop at our booth.

Highlights of the AATCC program include a luncheon for the Olney Medal Award on Friday and a Boston Pops Concert that evening; and the intersectional prize-paper contest and award, the textile-schools alumni luncheon, and the annual banquet on Saturday.





Give your water extra "Scour Power"

Try our "Cerfak" detergents in your mill; basic organic research in Houghton laboratories has resulted in exclusive formulations in the field of surface active agents.

Many mill men are marveling at the almost magic speed and cleansing action our "Cerfak" detergents provide over the full pH and temperature range. New Houghton developments have given them the power to penetrate, loosen, absorb and whisk away dirt . . . faster . . . with utmost safety for your finest fabrics. And at low over-all costs that help you keep pace with aggressive competition.

A series of Houghton "Cerfak" products permits you to choose the one that is perfect for your specific wet processing jobs. Next time the Houghton Man calls at your mill, why not ask him to put our knowledge of surface active agents to work for you?

IT WILL PAY YOU TO KNOW THE HOUGHTON LINE OF *WET PROCESSING AGENTS* . . .

CERFAK { the trade name to specify when *detergency* is the chief factor you want.

SURFAX { selected whenever exceptionally good *wetting* and *re-wetting* power is needed.

New Bulletin on "Surface Active Agents" Mailed on Request

. . . products of

E. F. HOUGHTON & CO.

PHILADELPHIA · CHICAGO · DETROIT · SAN FRANCISCO

Ready to give you on-the-job service . . .

For more information, write direct or use Reader Service post card.

Guide to Exhibitors . . . AATCC Textile Dyeing & Finishing Exhibit

ALCO OIL & CHEMICAL CORP. (139, 140)

Trenton Ave. & William St., Philadelphia 34, Pa.

Features latex compounds for coating pile fabrics, sodium-polyacrylate - type thickeners, latex compounding chemicals, latex compounds for use in the manufacture of foam rubber, and a new line of rubber chemicals developed especially for use in compounding latex.

Representatives at booth:
Arthur E. Jones, Jr.
John W. Jordan
Donald W. Robinson
F. M. Tolin
Dr. O. B. Hager
W. N. Moore

AMERICAN ANILINE PRODUCTS, INC. (130, 131)

50 Union Square, New York 3, N. Y.

Features a complete line of American Aniline dyestuffs and textile specialties. Several newly released specialties will be included in the exhibit.

Representatives at booth:
J. J. Marshall
W. J. Loeffler
E. F. Smith
J. H. Orr
J. T. Bohannon, Jr.
E. K. Bush
H. I. Belton
R. W. Brewer

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AA-BB-CC)

Lowell Textile Institute, Lowell, Mass.

Features association research project displays.

Representative at booth:
Dr. H. W. Stiegler

AMERICAN BEMBERG CORP. (108)

261 Fifth Ave., New York, N. Y.

Features Bemberg thick-and-thin spun staple and a wide assortment of fabric made from rayon yarn—spun staple and filament.

Representatives at booth:
James C. Fortune
William H. Six
Ernest H. Benzing

AMERICAN DYESTUFF REPORTER (16)

44 E. 23rd St., New York 10, N. Y.

Features a textile publication.

AMERICAN OPTICAL CO., INSTRUMENT DIV. (135)

Box A, Buffalo 15, N. Y.

Features P-45 polarizing microscope, AO rapid scanning spectrophotometer, bright field microscopes, phase microscope, stereoscopic microscopes, and microscope illuminators.

Representatives at booth:
N. J. Blaiklock
G. E. Guellich
R. J. Scott
W. E. Folland

AMERICA'S TEXTILE REPORTER (132)

286 Congress St., Boston 10, Mass.

Features a textile publication.

ANDERSON MACHINE SHOP, INC. (115)

Brook Road, Needham Heights, Mass.

Features the Pacific evenness tester.

Representatives at booth:
James M. Anderson
Angus G. Anderson
Miss Rita Canby

ATLAS ELECTRIC DEVICES CO. (136)

361 W. Superior St., Chicago 10, Ill.

Features accelerated fading, weathering, and washfastness testing equipment. The new accelerator for washfastness and abrasion testing and the new scorch tester for chlorine retention testing will also be shown.

Representatives at booth:
John W. Lane
J. E. Norton

BERSWORTH CHEMICAL CO. (27, 28)

875 Waverly St., Framingham, Mass.

Features "Versenes" chelating chemicals.

CALCO CHEMICAL DIV., AMERICAN CYANAMID CO. (104, 105, 106)

Bound Brook, N. J.

Features fast dyes with emphasis on required fastness properties for successful marketing of textile fabrics.

CARBIDE & CARBON CHEMICALS CO., TEXTILE FIBERS DIV. (31)

A Div. of Union Carbide & Carbon Corp.
30 E. 42nd St., New York 17, N. Y.

Features dynel staple fiber, finished goods, new colors, and finishes.

Representatives at booth:
R. K. Kennedy
F. C. King
H. Carolan
T. A. Field
F. Rippner

CATALIN CORP. OF AMERICA (110, 111)

1 Park Ave., New York 16, N. Y.

Features Catalin textile finishing resins.

Representatives at booth:
H. Krehbiel
L. L. Beck
V. W. Moss
P. A. Krentel
R. A. Woodward
E. S. Horsman
S. A. Trezise
W. T. Bell

CELANESE CORP. OF AMERICA (4, 5, 6)

180 Madison Ave., New York, N. Y.

Features acetate fibers alone and in blends with other fibers. Apparel and drapery materials and floor coverings will be shown. The chemical section of the exhibit will be devoted to Celanese products used in wet-processing operations.

Representatives at booth:
Dr. A. F. Tesi
Dr. V. S. Salvin
Paul C. Duggan
George Ward
B. F. Pimentel

CIBA CO., INC. (17, 18)

627 Greenwich St., New York 14, N. Y.

Features an institutional display of vat-dye production and technical services.

Representatives at booth:
Raymond W. Jacoby
Chester M. Kopatch
Haven A. Morrison
Henry G. de Redon
John V. Geary
George L. Wyatt
Arnold G. Tew
John A. Harley
Henry E. Stanley, Jr.
Arthur F. Rodenhaven

THE CRAVENETTE CO., U. S. A. (109)

Eighth & Madison Sts., Hoboken, N. J.

Features new aluminum coating for linings and a new durable water repellent for cottons only.

Representatives at booth:
Charles Avery
Fred Barbaro
Robert C. Hunzinger

CUSTOM SCIENTIFIC INSTRUMENTS, INC. (149)

541 Devon St., Arlington, N. J.

Features a CSI-Stoll Quartermaster Universal wear tester, a CSI Flex tester, and an SPI flammability tester.

Representative at booth:
H. J. Bultman, Jr.

DOW CORNING CORP. (22, 23)

Midland, Mich.

Features DeCetex 104, Dow Corning Silicone (Class H) electrical insulation, silicone lubricants and greases, and Dow Corning Antifoam A Emulsion.

Representatives at booth:
F. L. Dennett
Bob Ford
Norton Foster
J. T. Duane
R. E. Knopf
C. E. Gibson

E. F. DREW & CO., INC., TEXTILE CHEMICAL DEPT. (19, 20)

15 E. 26th St., New York 20, N. Y.

Features data on the new Druso 2HV and new Drustats.

Representatives at booth:
K. W. Hartmann
J. P. Redston
L. W. Davis
A. Troy
W. G. Paul
W. H. Kirkpatrick
W. Cummings
G. S. Chamberlin

E. I. DU PONT DE NEMOURS & CO., INC., DYES & CHEMICALS DIV. (24, 25, 26)

Wilmington 98, Del.

Features dyestuffs and fine chemicals.

E. I. DU PONT DE NEMOURS & CO., INC., TEXTILE FIBERS DEPT. (7, 8, 9)

Wilmington, Del.

Features textile fibers and fabrics.

EMERY INDUSTRIES, INC. (10, 11)

Carew Tower, Cincinnati 2, Ohio

Features Twitchell oils for woolens, worsteds, cotton finishing, and synthetics; Emery fatty acids; plastolein plasticizers for vinyls, synthetics, and rubbers; new Twitchell 7421 worsted oil.

Representatives at booth:
R. F. Brown
V. W. Colby
N. A. Ruston
W. T. Meinert
W. H. Shields
H. T. Buckley
W. A. Colby
J. M. Washburn, Jr.
J. W. Ritz
J. P. Clancy
T. L. Reilling
F. L. Ekstrand
A. C. Fusaro

FAIRCHILD PUBLICATIONS (10A)

7 E. 12th St., New York, N. Y.

Features a textile publication.

GASTON COUNTY DYEING MACHINE CO. (116)

Stanley, N. C.

Features laboratory dyeing equipment for packages, raw stock, cones, cheeses, etc., and a rotary-type knit-garment dye machine for both high temperature and conventional dyeing.

Representatives at booth:
G. H. Hacker
R. P. Craig
Gordon Hacker

GEIGY CO., INC. (14, 15)

89-91 Barclay St., New York 8, N. Y.

Features dyestuffs, new Irgalan dyestuffs, and Mitin durable mothproofing.

Representatives at booth:
W. H. Turner
H. A. Keenan

GENERAL DYESTUFF CORP. (107)

435 Hudson St., New York 14, N. Y.

Features new developments in dyeing, with emphasis on the dyeing of the new man-made fibers. Samples of dyed fabrics with formulations will be on display, as well as data on new dyestuffs and textile chemicals. Animated representations of the Williams continuous stock-dyeing machine and the Marhen-process equipment will be shown.

Representatives at booth:
J. R. Bonnar
C. A. Bergeman
W. R. Brandt
P. J. Choquette
J. H. Hennessey
L. S. Thompson

(Continued on page 184)

NOW!

ARIGEN PASTES

A Brand New Form of Stabilized Azoic Dyes

Interchemical's new Arigen Pastes are the first stabilized azoic dyes ever to be offered in emulsion form. They have several definite advantages for the fine-screen printing of cotton, spun rayon, and other fabrics. Arigen Pastes were developed specifically for application by Interchemical's exclusive Aquady Emulsion method. They also can be applied in conventional gum thickeners.

Major advantages of Arigen Pastes when applied in Aquadye Emulsion methods:

BETTER HAND

SHARPER MARKS

SMOOTHER BLOTCHES

EASE OF APPLICATION

Full details on printing with Arigen Pastes are given in our bulletin IC-101W. Phone, write or use coupon for your free copy.

Interchemical's standard azoic dyes are also available in the colloidal form Arigen Powders, and Arigen Solutions.

Aridye PIGMENT COLORS Reg. U.S. Pat. Off.

Interchem Dyes Reg. U.S. Pat. Off.

Arigen, Aquadye and Aribase are trademarks of Interchemical Corporation.

Interchemical Corporation
Textile Colors Division
HAWTHORNE, N.J.
Providence, R.I. Rock Hill, S.C.

Interchemical Corporation, Textile Colors Division, Hawthorne, N.J.

Please send me Bulletin IC-101W on printing with Arigen Pastes.

Name:..... Title:.....

Company:.....

Street:.....

City:..... Zone:..... State:.....

4269

Guide to Exhibitors . . . AATCC Textile Dyeing & Finishing Exhibit

(Continued from page 182)
Dr. H. E. Hager
Dr. H. Luttringhaus
D. E. Marnon
E. Hansen
H. Hartnett
W. Dewing

HILTON-DAVIS CHEMICAL CO. DIV. (113, 114)
2235 Langdon Farm Road, Cincinnati 13, Ohio

Features dyestuffs for wool, cotton, silk, and synthetics.

Representatives at booth:
Nelson S. Knaggs
W. Hersey Howard
A. S. Davis
P. C. Blackman
W. B. Uhler
E. Roper

E. F. HOUGHTON & CO. (137)
303 W. Lehigh Ave., Philadelphia 33, Pa.

Features surface-active agents, wool oils, softening and finishing oils, textile lubricants, new cationic softeners, new Houghto-Size No. 475 for cotton warps, and new wax emulsions.

Representatives at booth:
C. B. Kinney
O. R. Kerst
H. G. Senning
O. H. McClay
H. E. Peterson
J. A. McLaughlin

INSTRUMENT DEVELOPMENT LABORATORIES, INC. (103)
163 Highland Ave., Needham Heights 94, Mass.

Features colorimetric measuring and control devices. A new universal illuminator attachment for the Color-Eye, a tristimulus computer, an abridged spectrophotometer attachment for the Color-Eye, and a new Colorede instrument will be shown.

Representatives at booth:
A. R. MacDonald
C. A. Speas
G. P. Bentley

INTERCHEMICAL CORP., TEXTILE COLORS DIV. (120)
Hawthorne, N. J.

Features pigment colors for textile printing and dyeing, acetate dyes, stabilized azoic dyes, fast-to-light direct dyes, metallized dyes, new Arigen pastes, and new Arilite dyes.

KELCO CO. (144)
31 Nassau St., New York 5, N. Y.

Features Keltex, the algin print paste thickener.

Representatives at booth:
J. J. Sullivan
L. L. Blanchard
F. Habersberger
John Politi
R. O. Davison

MACBETH CORP. (145)
P. O. Box 950, Newburgh, N. Y.

Features laboratory and industrial pH meters, super artificial-daylight lamp for color matching, Macbeth-Ansco color densitometer, and Nickerson-Hunter cotton colorimeter.

Representatives at booth:
Norman Macbeth
Warren B. Reese
Paul A. Celella

MODERN TEXTILES (D-1)
303 Fifth Ave., New York 16, N. Y.

Features a textile publication.

MONSANTO CHEMICAL CO. (146, 147, 148)
St. Louis 4, Mo.

Features Monsanto textile chemicals.

Representatives at booth:
H. Chandler Holmes
J. E. Crawford, Jr.
Walter Campbell
C. L. Jones, Jr.

NATIONAL ANILINE DIV., ALLIED CHEMICAL & DYE CORP. (100, 101, 102)
40 Rector St., New York 6, N. Y.

Features an animated display featuring "The Aniline Story" plus developments in dye and synthetic - detergent applications.

Representatives at booth:
Frank W. Gainey
Michael E. Keane
T. Frank Tangney
John L. Waldo
Karl H. Schmatzler
Leverett N. Putnam
Albert E. Sampson
John Hirn, Sr.
John Hirn, Jr.
Frank Toher
Edward Allard
Paul J. Sullivan
Dr. O. M. Morgan
W. A. Holst

NATIONAL MILLING & CHEMICAL CO. (122)
4601 Nixon St., Philadelphia 27, Pa.

Features soaps and detergents.

Representatives at booth:
W. Russell Harris
John W. Tomalino

NATIONAL STARCH PRODUCTS, INC. (141, 142)
270 Madison Ave., New York 16, N. Y.

Representatives at booth:
F. Greenwall
J. F. Fitzgerald
J. W. Bradley
L. L. Dowdee
H. C. Olsen
W. H. Stone
J. J. Ducharme
E. J. Maslanka

NOPCO CHEMICAL CO. (125, 126)
First & Essex Sts., Harrison, N. J.

Features antistatic chemicals for processing nylon, Orlon and Dacron, natural fibers, and blends.

Representatives at booth:
Walter B. Morehouse
L. E. Rosaiter
Ralph Schaubhut
Arthur Waldron

NORTH AMERICAN RAYON CORP. (108)
(See American Bemberg Corp.)

OWENS-CORNING FIBERGLAS CORP. (133, 134)
16 E. 56th St., New York, N. Y.

Features Fiberglas decorative fabrics, including new roller-printed and screen - printed drapery fabrics.

Representatives at booth:
John Wilson
R. F. Caroselli

ROHM & HAAS CO. (123, 124)
222 W. Washington Square, Philadelphia 5, Pa.

Features information on surface-active agents, nylon-sizing materials, and textile enzymes.

Representatives at booth:
W. J. Thackston
H. F. Lawton
H. F. Travis
R. G. Thomas
R. V. Dugdale
W. A. Wardell
R. G. Lawrence
J. M. Chandler
T. G. Sloan

ROYCE CHEMICAL CO. (32, 33)
Carlton Hill, N. J.

Features textile chemicals, including Vatrolite, Discolite, Parolite, Castrolite, Velvoray, Velvo softeners, Neoxymes, Neowet, and Dispersall.

Representatives at booth:
W. Brown
Arthur Finley
R. L. Jones
H. C Royce
P. J. Wood

SANDOZ CHEMICAL WORKS, INC. (29, 30)
61 Van Dam St., New York 13, N. Y.

Features dyes, textile chemicals, and finished fabrics.

SEYDEL-WOOLLEY & CO. (129)
748 Rice St., Atlanta, Ga.

Features textile chemicals and wet-processing auxiliaries.

Representatives at booth:
Paul Seydel
David Meriwether
Carl Blumenstein

ALEXANDER SMITH, INC. (118, 119)
525 N. Broadway, White Plains, N. Y.

Features various fabrics made of Textralized fibers and several items exhibiting new applications of the Textralizing process.

Representatives at booth:
John W. Clarke
E. S. Lamont

SOCONY-VACUUM OIL CO., INC. (21)
26 Broadway, New York 4, N. Y.

Features wool, synthetic, and worsted-fiber lubricants, cotton textile processing oils, including warp-size softeners and water repellents, and special lubricants for new textile processes.

Representatives at booth:
W. S. Kumblad
P. J. Martin
C. C. Smith

TENNESSEE EASTMAN CO. (1, 2, 3)
Kingsport, Tenn.

Features recent developments in acetate colorfastness, including information on the GLF or Estron dye series and the fastness properties of Chromspun.

Representatives at booth:
F. L. Bume
Chris Getsinger
Duncan Carmichael
Robert R. Moore

TEXTILE AGE, INC. (112)
22 W. Putnam Ave., Greenwich, Conn.

Features a textile publication.

TEXTILE BULLETIN (121)
Charlotte 1, N. C.

Features a textile publication.

TEXTILE INDUSTRIES (138)
806 Peachtree St., N. E., Atlanta, Ga.

Features a textile publication.

TEXTILE WORLD (117)
330 W. 42nd St., New York 36, N. Y.
201 E. Coffee St., Greenville, S. C.

Features a textile publication.

Representatives at booth:
Edwin D. Fowle
Prentice M. Thomas
Richard C. Scott
James H. Kennedy
George M. Moisson
William Buxman
W. B. Dail
Arch W. Fisher
Ralph C. Chisholm
J. C. White, Jr.
M. C. MacKenzie
W. G. Ashmore
H. C. Harvey
J. G. Sabella

VIRGINIA-CAROLINA CHEMICAL CORP. (143)
401 E. Main St., Richmond, Va.

Features Vicara zein fiber and fabrics and garments with Vicara in the blend.

Representatives at booth:
John H. Karrh
Jesse F. Yeates
Carl C. Mattman
William E. Backus
A. G. Koos
Fred Young

VIRGINIA SMELTING CO. (12, 13)
West Norfolk, Va.

Features chemicals, sulfur dioxide, and sodium hydrosulfite.

Representatives at booth:
W. F. Luckenbach, Jr.
T. T. Allan
E. H. Keys
J. R. Eldridge
J. B. Johnson
H. B. Peterson

WALLERSTEIN CO., INC. (127, 128)
180 Madison Ave., New York 16, N. Y.

Features desizing enzymes.

Representatives at booth:
J. Andrew Clark
James J. Casserly
John C. Robertson
F. A. Taberski

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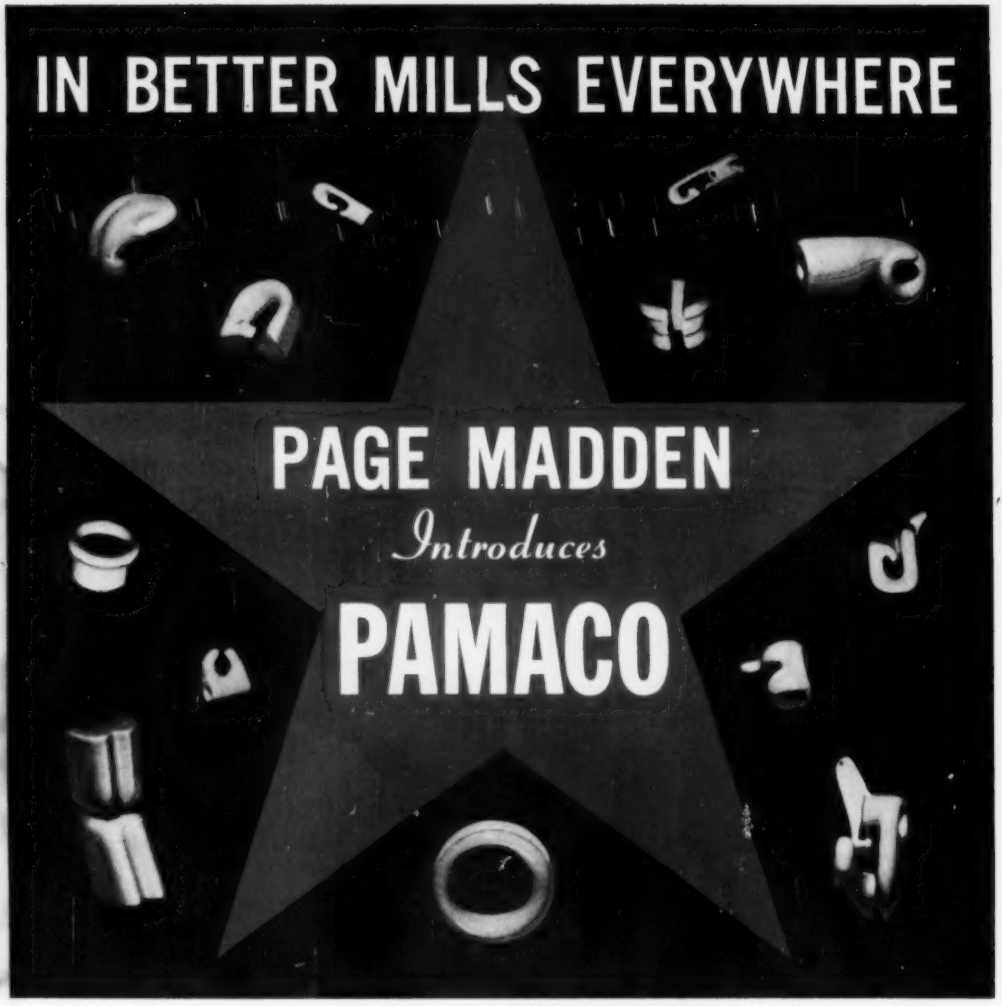

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****** Cost for this homogeneous body surprisingly modest ****** TAN in color ****

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Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS... Listed here for October are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY

A combination extractor-dryer is described in a bulletin prepared by Standard Fabricators, Inc. The folder introduces a new system of high-speed package dyeing, extracting and drying. A new dye spindle is discussed in the same folder. **(F-1)**

A flat-knitting machine that operates on the automatic doubled system is described in a bulletin prepared by Edouard Dubied & Cie. The machine is recommended for the manufacture of all outerwear articles with ribbed borders. **(F-2)**

A striper for knitting super-loop terry is discussed in a bulletin put out by Supreme Knitting Machine Co., Inc. The features of the fabric and the machine are discussed. **(F-3)**

A conveyor press that will fold, convey, press, and package in one continuous operation is the subject of a brochure issued by American Safety Table Co. **(F-4)**

Borders are produced in tubular, rib, half and full cardigan on a knitting machine described in a bulletin of the Knitting Machine & Supply Co. The machine has three yarn carriers and runs at 65 courses per min. **(F-5)**

A buttonhole machine that is said to produce 10,000 to 14,000 buttonholes per 8-hr. day is described in literature prepared by the Reece Corp. **(F-6)**

Dyeing machines of stainless steel construction for wool and worsted are discussed in a bulletin prepared by Standard Fabricators, Inc. Raw-stock, worsted-top, worsted-top-pot, worsted-skein, and worsted-package machines, plus a hook-up system for continuous operation, are separately treated. **(F-7)**

Jacquard knitting machines for jersey outerwear and ribbed underwear are described in a brochure of Mellor Bromley & Co., Ltd. Fifty pattern changes are possible on the jacquard machine. **(F-8)**

Dyebecks of stainless-steel construction that are designed to dye silk and synthetic fibers, both knitted and woven, are pictured and described in a bulletin prepared by Riggs & Lombard, Inc. Open and enclosed models are shown. **(F-9)**

A rayon cake-soaking machine and a centrifugal extractor and a cake dryer that dries in six hours are described in a bulletin put out by Standard Fabricators, Inc. **(F-10)**

AUXILIARY EQUIPMENT

Spectrophotometers, pH meters, and related instruments are pictured and described in a booklet prepared by Beckman Instruments, Inc. Schematics and close-ups of controls supplement the descriptions of each instrument. **(F-11)**

Sheet-material testing instruments are the subject of a booklet published by W. & L. E. Gurley. Stiffness testers, strip cutters, smoothness-porosity-softness testers, permeometers, sizing testers, densometers, and automatic-timing attachments are specifically covered, and a table of "Air Resistance Equivalents" is a feature. **(F-12)**

Water filters of the pressure type are described and explained in a publication of Graver Water Conditioning Co. Tables of the filter capacities and dimensions of both the horizontal and vertical type are included. **(F-13)**

Industrial spray nozzles for humidification are described in a bulletin of Binks Mfg. Co. Data includes dimensions, capacities, and spray angles. Twenty-nine applications of the nozzles are given in an index. **(F-14)**

Tachometer heads for measuring rotational or linear low speeds are the subject of a data sheet prepared by Metron Instrument Co. Coupling methods and precautions are discussed in the bulletin. **(F-15)**

Package-tying machines are described in a brochure of National Bundle Tyer Co. Skein-tying machines and other general and specific kinds of tyers are mentioned. **(F-16)**

The continuous automatic-oiling system of Alemite Corp. is explained in a pamphlet that says the system will extend bearing life, cut oil consumption, and reduce maintenance. **(F-17)**

Heavy-duty scales for every purpose are pictured in a parade of scales by Detecto Scales, Inc. The scales range from a 125-lb. parcel-post scale to a 50-ton truck scale. **(F-18)**

An index of technical literature published by the Minneapolis-Honeywell Regulator Co., is now available. The catalogs, specification sheets, technical

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Reader Service (Continued)

bulletins, handbooks, and the magazine of that company are indexed. **(F-19)**

A surface-tension-measuring instrument that measures under production conditions is described in a bulletin of Joseph B. Kushner, Engineer. The scale reading is multiplied by the specific gravity of the solution and the instrument constant to get the surface tension. **(F-20)**

An electronic-control thermometer is described in a specification sheet by the Minneapolis Honeywell Regulator Co. A resume of available models is given. **(F-21)**

A flammability tester for measuring the flammability hazard of sheet materials from 0.001 to 0.250 in. thick is described in a bulletin of the Custom Scientific Instruments, Inc. A clock records the time, and a thermocouple registers the heat intensity. **(F-22)**

A conveyor that rises 9 ft. in a 24-ft. length at a 42° angle is described in a brochure put out by Wehle Conveyor Co. This conveyor is operated by a cast-iron sprocket and a chain. **(F-23)**

Mixers for wet-mixing liquids and solids, emulsifying, and homogenizing are the subject of a catalog prepared by Barrington Engineering Corp. The mixers are built with the material appropriate to the particular corrosion problem. **(F-24)**

Armored "flowrators" for high-pressure fluid-flow-rate measurement and control are given detailed treatment in a catalog of Fischer & Porter Co. General specifications and details of performance are treated. **(F-25)**

SUPPLIES AND CHEMICALS

The duck-manufacturing facilities of Dandux are presented in pictures and words by Daniels Cotton Duck Mills. **(F-26)**

A loom cloth roll of steel tubing and welded construction is presented in a bulletin of The A & W Machine Co. **(F-27)**

A vegetable oleic acid is discussed in a booklet prepared by Emerson Industries, Inc. Specifications, composition, and applications are covered; and the acid is said to have an unusually bland odor. **(F-28)**

Floor-pad material that controls vibration and noise without the bolting of machinery is the subject of a bulletin from The Korfund Co. The bulletin gives loading limits and shows typical installations. **(F-29)**

A reference chart on fatty acids and their derivatives is announced by E. F. Drew & Co., Inc. The chart shows the composition and physical properties of the 46 most widely used processing oils and fats, and the formula, molecular weight, and acid number of 23 fatty acids. **(F-30)**

Germicides and fungicides of Dow Chemical Co. for mold and bacteria control are discussed in a booklet prepared by that company. **(F-31)**

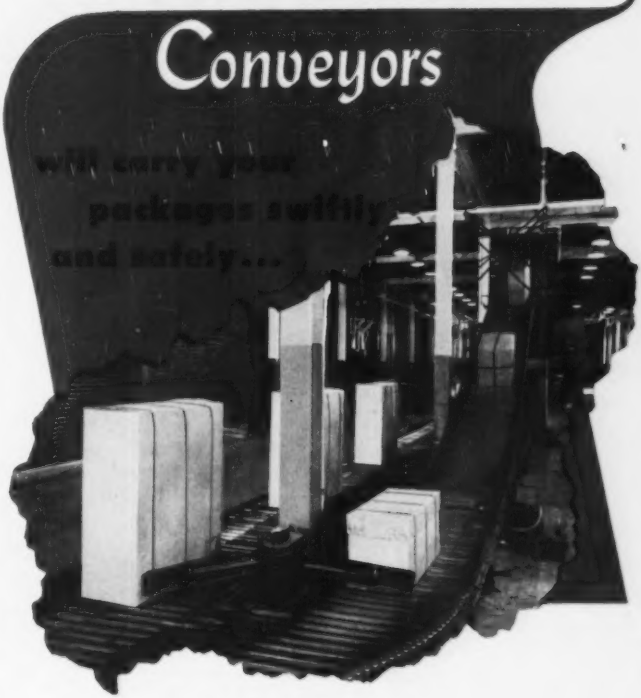
"Dyeing and Wet Finishing Techniques for Dynel" is the title of a manual put out by Carbide and Carbon Chemicals Co. This manual brings the subject up to date from the March, 1951, manual. New developments such as the "controlled addition of copper" technique are additions to the manual, and many of the old sections have been revised. **(F-32)**

Pressure-sensitive tapes are discussed in a booklet prepared by Minnesota Mining & Mfg. Co. Seven tapes for a variety of reinforcing and packaging usages are described. **(F-33)**

The Metron tachometers are explained in a bulletin published by Metron Instrument Co. The bulletin covers the principles of operation of the hand, portable, and fixed tachometers, with circuit diagrams and pictures to help the explanation. **(F-34)**

ALVEY

Conveyors



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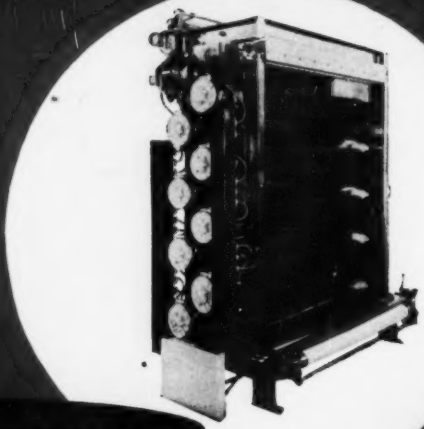

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"Most of our customers prefer METLKOR BRUSHES," states the Herman Machine Co., well-known manufacturer of clothroom equipment, "because:

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"—Rolls are balanced to prevent whipping.

"—All of which is conducive to long brush life and even brushing."

Hermas uses METLKORS in this new motorized brushing machine, as they have in other Hermas brushes, because of their superior performance.

The metal cores, of aluminum, cold drawn steel, stainless steel, copper, or bronze, cannot sag, split, or get out of alignment.

Bristle is wound on the cores by our patented refillable process, firmly held with flat metal wire, and sealed with special baked plastic cement.

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Reader Service (Continued)

Heat-seal adhesive coatings are described in a data sheet prepared by American Resinous Chemicals Corp. The coatings discussed here are designed for use on paper, Glassine, aluminum foil, and cellulose acetate. **(F-35)**

Plasticizers are featured in an Emery Industries, Inc. booklet. Performance information is given for each, plus comparative characteristics. Methods of testing plastics are explained. **(F-36)**

Blue LFGL is a direct dye for fast-to-light blue and combination shades on cotton and rayon. It is discussed in a bulletin from the General Dyestuff Corp. **(F-37)**

"Industrial Magnifiers — How To Choose and Use Them" is a guide published by Bausch & Lomb Optical Co. Fifty photographs and diagrams help to tell the story. **(F-38)**

Conventional methods of cotton slashing are attacked in "A Message to Fine Goods Mills," published by Morningstar, Nicol, Inc. A new size for cotton that has been successful in slashing synthetics is offered in the booklet. **(F-39)**

ENGINEERING AND MAINTENANCE

A Condensifilter for removing water, oil, and foreign matter from compressed-air lines is the subject of a bulletin of Hankison Corp. Rated capacity is 30 cfm. at 100 psi. **(F-40)**

A directory of electrodes and welding alloys is published by Eutectic Welding Alloys Corp. **(F-41)**

Air conditioning and ventilation filters are described in a bulletin prepared by Dollinger Corp. Removal of dust and foreign matter by the impingement method is the subject. **(F-42)**

Gear motors are described in a bulletin of Star-Kimble Motor Division. The motor and speed reducer are in a single housing, and the speed ratios range from 2.5:1 to 97:1. **(F-43)**

A preventive-maintenance program is presented in a booklet prepared by Westinghouse Electric Corp. Power equipment and electrical installations are covered, and a suggested maintenance schedule is included. **(F-44)**

Valves and meters are the subject of a bulletin prepared by Rockwell Mfg. Co. The bulletin explains the applications of these devices in process industries. **(F-45)**

Industrial-lighting installations are discussed in the new edition of the RLM Specifications Book, prepared by RLM Standards Institute. **(F-46)**

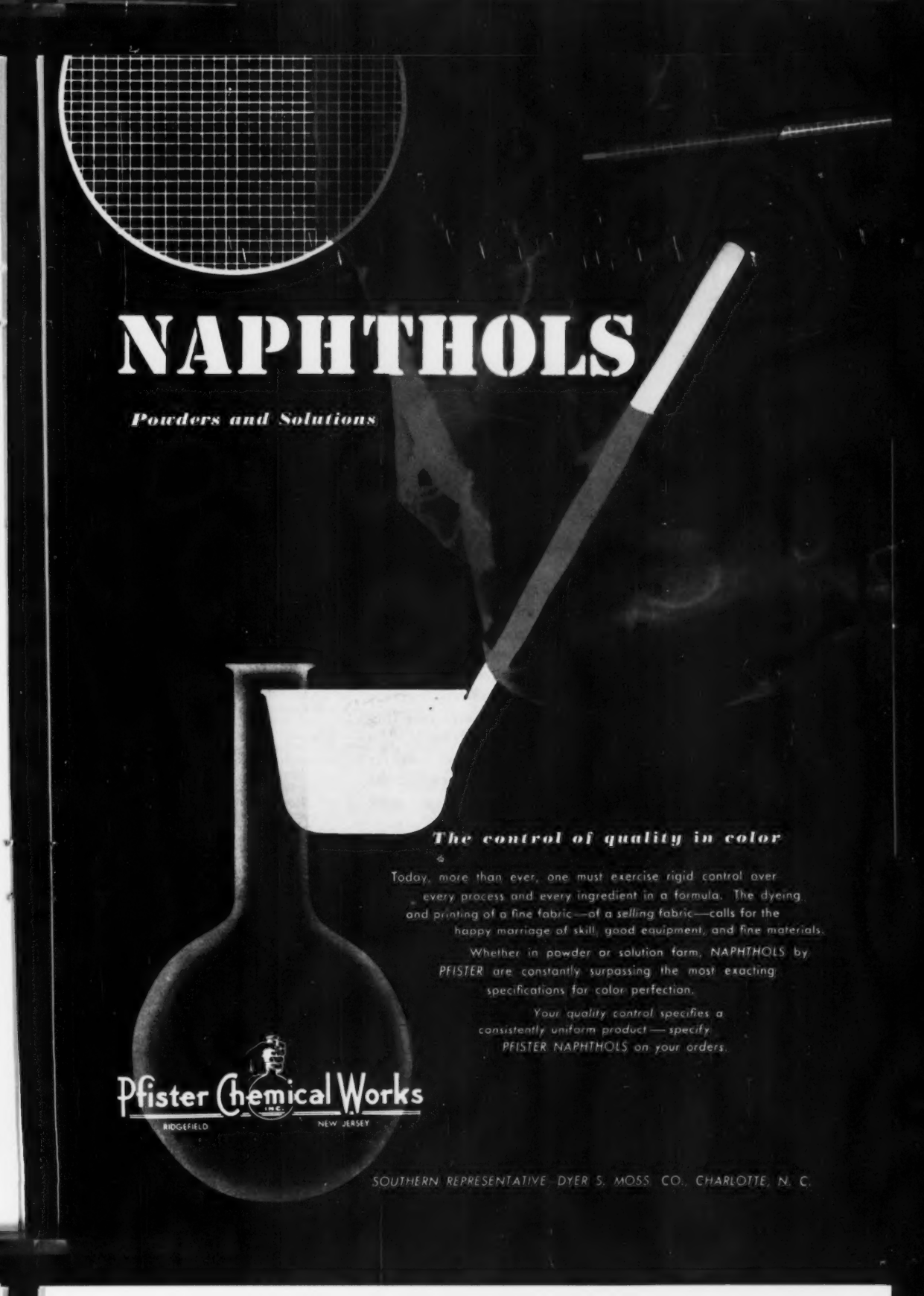
Interested in repairing or resurfacing your roof? Information is offered in a folder prepared by Hallemite Mfg. Co. **(F-47)**

Motor pumps for air conditioning are illustrated in a bulletin published by Ingersoll Rand. Horsepower ratings and suggested uses are given. **(F-48)**

Lift trucks that make one man do the work of three or four are described in a bulletin of Barrett Cravens Co. A lift truck with a single-package hydraulic unit is featured. **(F-49)**

Equipment for cotton and rayon mills from Westinghouse is described in a booklet prepared by Westinghouse Electric Corp. Power equipment for each department of the mill is separately treated. **(F-50)**

Get that SCRAP Back to WORK!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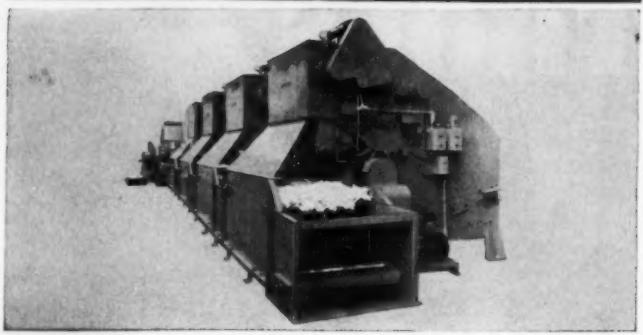
PROCTOR BLENDING EQUIPMENT



One mill executive said recently, "If your blend is off, you're licked in the whole mill." How true that is! That is why Proctor engineers have spent so much time and money perfecting up-to-the-minute blending equipment that mixes fibers *thoroughly, accurately and automatically.* In many installations of Proctor automatic blending equipment—variance in the blend is held to less than 1%. This accuracy (which never could be achieved by manual blending) means that the last yarn made from a blend is exactly the same as the first.

Thousands and thousands of pounds of stock are passing through Proctor systems every day—with accuracy being reflected in improved yarn uniformity. When can we discuss your requirements?

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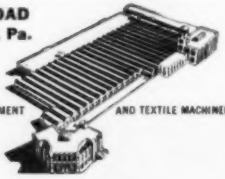


MANUFACTURERS OF INDUSTRIAL DRYING EQUIPMENT AND TEXTILE MACHINERY

Vinyl Coatings

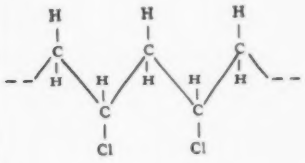
(Continued from page 145)

Theory of Stabilization

Stabilizers are essential in all vinyl compounds to prevent decomposition from heat of processing and to minimize degradation of the finished product from light and heat in service or in storage.

The theory of the mechanics of stabilization of vinyl-resin compounds is controversial. There is some divergence of opinion as to the exact nature of the breakdown of the polymer.

The generally accepted character of the resin is that it is a linear polymer of the structure:



Breakdown could occur by the splitting off of chlorine and hydrogen in the form of hydrochloric acid or by oxidation. The latter most probably occurs as a secondary effect after the formation of conjugated double bonds as the result of the breaking away of the hydrogen and chlorine.

With such a decomposition mechanism, together with the indications that HCl further catalyzes the decomposition, early investigations were primarily concerned with the use of basic products, metallic oxides, and other materials that might act as acid acceptors. Antioxidants, such as those used in rubber compounding, were also investigated but were not found to be particularly effective in practice.

Experience has shown that neutralization of the acid formed is not enough to stop decomposition, although it does have some stabilizing effect. The salts of certain metals are much more effective than the same salt of another metal. Lead carbonate is definitely more efficient as a stabilizer than calcium carbonate, while calcium carbonate is more effective than sodium carbonate. All these salts would effectively neutralize the hydrochloric acid formed and thus prevent further catalytic action.

In practice, the salts, both organic and inorganic, and the soaps of lead, barium, and cadmium have been found to be among the most effective stabilizers. Tetravalent tin-organo compounds are also useful. Their cost tends to limit their application, and their most extensive use has been in the stabilization of clears, where their lack of pigmenting effect is highly desirable.

Many materials, not particularly effective when they are used alone, show synergistic effects when they are used in combinations. Barium and cadmium compounds illustrate the point. Certain epoxy compounds, not outstanding sta-

bilizers in themselves, have been found to increase the effectiveness of many metallic stabilizers.

Don't Forget Other Requirements

There are many factors to be considered in selecting a stabilizer system. While maximum stabilization of the compound to heat and light is the fundamental requirement, such characteristics as cost, toxicity, compatibility, pigment characteristics, and the effect of the stabilizer on the flow characteristics are important in making a preliminary screening of stabilizers for plastisol compounding.

The effect of the stabilizer on other materials in the compound cannot be ignored. To illustrate, basic white lead carbonate is effective in stabilizing vinyl resins, but its alkalinity is apt to affect the stability of many pigments. It will also tend to form lead soaps with plasticizers of a fatty nature. Such reaction products will spew to the surface and cause discoloration, tack, poor print adhesion, and other detrimental results.

Many of the metallic soaps, epoxy compounds, and other materials are more or less incompatible with the resins and some plasticizers. If of a mobile nature, they tend to bleed to the surface with undesirable results. Many may be used in small quantities without danger. The safe concentration is dependent on the degree of incompatibility and must be determined for each stabilizer. Danger of bleeding is often increased when secondary plasticizers are used.

Lead compounds are among the most effective in stabilizing action. Their toxicity is their principal drawback. This hazard primarily concerns those handling the material in compounding and coating, since after it is incorporated in the coating there is comparatively little chance of its being transmitted to the human system by contact. If they are used, extreme precautions must be taken to protect the operators.

High specific gravity and comparative low cost of lead compounds are assets if the coating is sold on a weight basis, but other materials with lower specific gravities may give a better cost figure when goods are sold on a basis of volume of coating applied. Most of the stabilizers have a definite pigment value, and this value makes them unsuited for clear coatings. The index of refraction of Plumbsoil B, a lead silicate compound, is fairly close to that of the vinyl resins; and it is often used for translucent coatings.

Several organo-phosphates exhibit stabilizing characteristics and are used to some extent.

It is not practical to go into the details of each available stabilizer because of the large number of materials offered for this purpose.

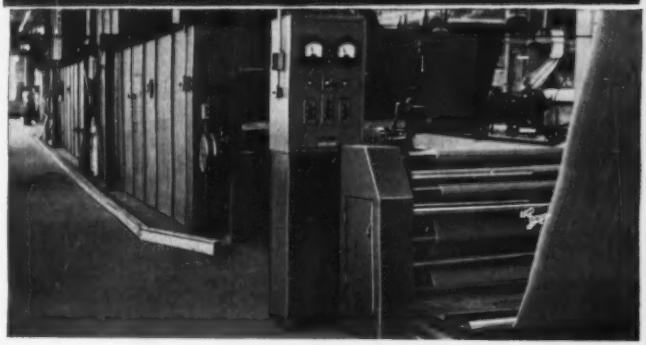
Pigmentation Must Be Considered

Any pigment suitable for vinyl-resin compounding may be used in the plastisols. It is advisable to select colors with the lowest bulk and oil-adsorption properties, since they have less tendency to thicken the dispersion.

Titanium dioxide (rutile type), Cad-

Fabric Quality is Guaranteed with an up-to-the-minute

PROCTOR OVERFED PIN TENTER

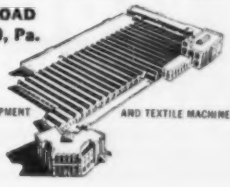


Resin impregnated fabrics are dried on the Proctor overfed pin tenter without danger of creasing or migration—and delivered with the ultimate in shrinkage control. The relaxed drying which insures top fabric quality and a full hand is made possible by three features engineered into every Proctor installation. 1. An overfeed mechanism, which makes it possible to overfeed fabric to the pins in any percentage from minus 5% to plus 35% and have the cloth evenly and uniformly deposited. 2. A sensitive guiding mechanism which provides accurate guiding up to and in excess of 100 yards per minute. 3. A balanced drying system which permits maximum drying speed without fabric distortion. Available in either vertical or horizontal type—Proctor overfed pin tenters guarantee quality results in a wide range of fabrics—suitings, laces, tricots, specialty goods and standard fabrics. Write for complete information.

Much Proctor drying equipment and textile machinery is covered in full or in part by patents and patents pending.

PROCTOR & SCHWARTZ • INC •

710 TABOR ROAD
Philadelphia 20, Pa.



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2,000, 2,500, 3,000, and 3,500 capacities on 15" load center.
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Special Masts to Order.
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mium red, Watchung red toner, chrome yellow, phthalocyanine green, phthalocyanine blue, C.P. chrome yellow, molybdate orange, carbon black, bone black, and the chemically precipitated iron-oxide reds, yellows, and browns are commonly used. Antimony oxide, because of the flame resistance it imparts, is sometimes used as a part of the pigmentation.

Many manufacturers dislike to add color pigments to large mixers because of cleaning difficulties created by such procedure. Instead they make a colorless dispersion as a base for all colors and then tint for the individual color runs by adding the color paste to the master dispersion in small mixers.

Fillers Can Lower Cost

Fillers are used primarily to reduce the cost of the coating compound. As with pigments, oil adsorption and bulk of fillers have considerable effect on flow properties of the paste dispersion. Commonly used fillers are listed in the order in which they tend to increase the viscosity: barytes, Surfex (treated precipitated calcium carbonate), whiting, Superfloss (diatomaceous material), and clay. Clays, due to their colloidal characteristics, give viscosities six to eight times those obtained with barytes.

Some compounders add other modifying components such as other resins, waxes, and masking odors. Such materials are usually incorporated for special uses and are not considered regular compounding ingredients. Wetting agents have been used to aid in making the paste dispersion. As a rule, they reduce the water resistance of the coating and lower the adhesion when the fabric backing is wet.

In compounding for upholstery stocks, the following is suggested as a starting point. Modifications may be necessary to adapt the pliability to the particular fabric required or to meet definite specifications.

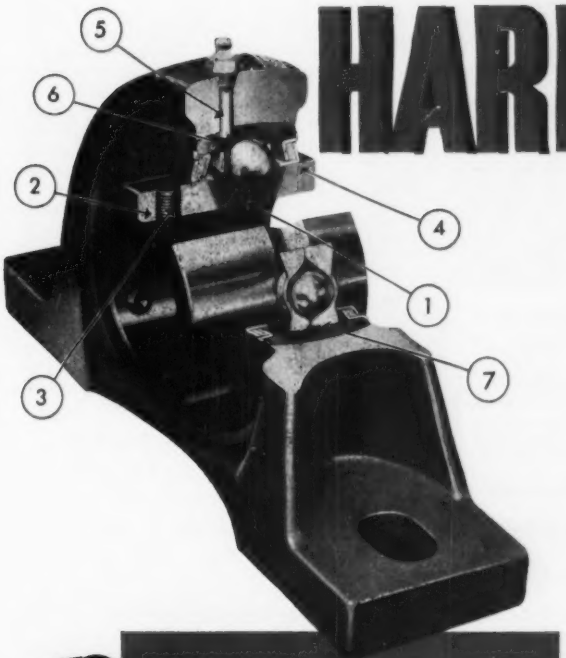
	(parts)
Geon 121 (Polyvinyl chloride polymer) ..	100
Dioctyl phthalate (Primary plasticizer)	35
Santicizer 141 (Phosphate-type plasticizer to increase flame resistance)	12
Dinonyl sebacate (Plasticizer to increase cold resistance and reduce viscosity)	15
Barytes (Filler)	15
Color pigment	5
Barca 10 (Barium-cadmium stabilizer)	5
Paraplex G-60 (Epoxy material)	3

When the plastisol is mixed, considerable air is entrapped in the viscous paste formed. When it is applied to the fabric, such air will cause bubbling, pin holes, and other defects during fusion. Deaëration of the finished plastisol is necessary for coatings that are to be finished smooth and is desirable in all cases. Subsequent embossing will, however, heal many of the defects caused by entrapped air.

For more information, write direct or use Reader Service post card.

Another

SEALMASTER First... ZONE HARDENING*



SEALMASTER first introduced the self-aligning, permanently-sealed, industrial ball bearing unit... the outer race locking pin... the ball retainer riding the inner surface of the outer race ring—all patented features of SEALMASTER Ball Bearing Units. NOW... SEALMASTER INTRODUCES ANOTHER MAJOR ADVANCEMENT—*ZONE HARDENING.*

ZONE HARDENING hardens the ball path section of the inner race ring by induction heating (See 1 in cutaway view). The extended part of the inner race is left in its original, metallurgically soft state. The hardened set screws are mounted through the soft part of the extended race (See 2 and 3), permitting race-to-shaft locking with increased holding power and greater resistance to shock and vibration. Firm lock of bearing to shaft minimizes danger of fretting corrosion and eliminates shaft wear.

OTHER SEALMASTER FIRSTS

PERMANENTLY SEALED, SELF-ALIGNING BALL BEARING
... has felt-lined steel flingers rotating in labyrinth to prevent entry of dirt and to retain proper amount of lubricant (see 4).

LOCKING PIN AND PERIMETER DIMPLE
... prevents bearing from spinning in its housing and prevents fretting corrosion between housing and bearing, yet permits sufficient shaft alignment without seal distortion (See 5 and 6).

BALL RETAINER
... rides on the ground inner surface of the outer race ring (See 7), eliminates ball wear, trapping grease and preventing its churning in the bearing.

SEALMASTER Units are available in many special housings as well as in the complete standard line. Write us for full details on special units. Ask for a copy of SEALMASTER Catalog 845.

*Patented—exclusively SealMaster's

SEALMASTER BEARINGS

FACTORY REPRESENTATIVES AND DEALERS IN ALL PRINCIPAL CITIES

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Spiral Reamer

NOW fast easy reaming with the new RIDGID 2-S Spiral

- ★ Reams pipe fast, easily and cleanly.
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- ★ Special design blades feed into metal at lightest pressure, cut it like wax.
- ★ Typical RIDGID tested design, fine craftsmanship and materials—extra long service for your money.
- ★ Buy the new 2-S spiral at your Supply House.

Reamer unit sold separately—fits your RIDGID OOR threader handle

THE RIDGE TOOL COMPANY • ELYRIA, OHIO

RIDGID

Work-Saver Pipe Tools

Dangerous Ginning

(*Continued from page 133*)

card nep count, a mill would have to card at a slower rate. The average carding rate for the 17 mills was 9.5 lb. per hr. To reduce neps 25%, I would estimate from tests on carding rate vs. neps that the rate would have to be reduced from 9.5 lb. to 7 lb. per hr.

[See "What Happens When You Speed Up Cotton Cards" on page 94. On an average for 11 varieties of cotton, reducing the carding rate from 9½ lb. per hr. to 7 lb. per hr. will reduce neps 21%. Reducing the rate from 9½ lb. to 6½ lb. per hr. will reduce neps 27%. Mr. Regnery's estimate is extremely well founded.—Editor]

In the case of a 100,000-spindle print-cloth mill, such a reduction would mean the addition of 80 cards, with an investment of $320,000. Operating these extra cards would cost the mill about $25,000 in additional direct-labor cost per year.

The ginner should use great caution not to overdry or overmachine cotton. By damaging cotton in these two ways, ginners might well add so much to mill costs or add so many neps to the finished cloth that cotton will be replaced by synthetic fibers.

Ginners Also Cause Ends Down

As shown on the chart, results on ends down are about as significant as those on neps.

In Test 4, where lint cleaners were by-passed and neps dropped, ends down per 1,000 spindle hours also dropped. As can be seen from the chart, ends down and neps follow each other.

The 38 ends down in Test No. 4 is about the maximum a mill can have and maintain its workloads. An increase in ends down would require the mill to assign smaller workloads or lower spinning production to bring the ends down back to standard.

Either of these changes, which would result in higher manufacturing costs, would make cotton less competitive with other fibers.

Overdrying, as shown in Test No. 5, caused ends down to rise to an average of 49 for the 17 mills. Forty-nine ends down per 1,000 spindle hours would require the mill to lower its workloads or slow down production.

What Ginning Costs Mills

The average grade of the cotton used in Test 4 was 92.1, or SLM—. The grade of the cotton used in Test 5 was 95.4, or SLM+. On today's

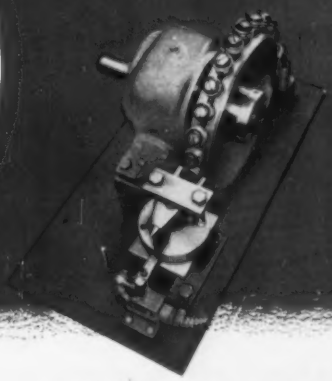
Recent grip breakdown tests, proved by

more than 1,000,000 bobbin transfers,

will give you many years of trouble-free loom operation

in the U S SHUTTLE!

U S GRIP-TESTER brings out the facts about shuttle-grip life!



One of the reasons for this amazing fact is that U S controls the quality of the shuttle from start to finish, using only the very best materials throughout. Every major part is made in the U S plant, under most exacting manufacturing specifications.

Take, for example, this **pre-tested** shuttle grip. It is helping to improve quality and save valuable production time on automatic looms **by avoiding down-time caused by grip failure.**

This is only one of many important features embodied in U S Shuttles. May one of the U S representatives call on you to explain the others?

U S BOBBIN & SHUTTLE CO.

Designed and built by the Research Department of U S, this machine for testing automatic shuttle grips provides a practical method for determining *in advance* the length of life of U S shuttle grips.

How tests are conducted: Butt ends of bobbins, placed around the periphery of a wheel spinning at speeds comparable to the actual bobbin transfer on a high speed loom, pass through the shuttle grip that is under test.

Pre-testing by this machine of samples from each production run is a safeguard for every mill using U S Shuttles . . . just one of the many unique ways in which the recognized superiority of all U S products is constantly being maintained.

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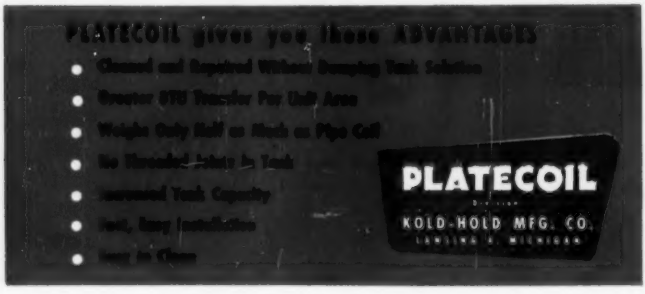
FASTER HEAT TRANSFER FOR 50% OF THE COST

Stainless Steel Platecoils in a large variety of standard sizes or standard single embossed Platecoils rolled to specific diameters as shown above are finding increasing use in the chemical and textile industries because they give five basic advantages in solving heat transfer problems.

1. Lower first cost.
2. Simplified and less costly installation.
3. Take less space in tank.
4. Higher heat transfer rate.
5. No pipe joints in solution.

Platecoils heat faster than pipe coils because they have more prime surface in a given area. A 22" x 47" Platecoil has the same heat transfer surface as 32 feet of 1½" pipe which occupies approximately 30" x 60" of space. Platecoils' faster heating coupled with their unusually low maintenance cost give 50% savings in space and material resulting in faster heat transfer for heating or cooling problems for approximately 50% of the normal cost. It costs you nothing to see what Platecoils will do for you. Write for complete data on your problem today.

Your free copy of the Platecoil technical data manual is available when requested on your letterhead. Write for Bulletin No. P32



market (according to Anderson Clayton Co.'s quotations), Test 4 cotton would cost the mill 38.80¢ a lb. and Test 5 cotton would cost 43¢ a lb. Waste at the mills ran 11.53% for Test 4 cotton and 10.20% for Test 5 cotton.

From these figures we can calculate the mill's cost for producing 100 lb. of cloth from each of the two cottons:

Test No. 4	
Cotton (111.5 lb. x 38.80¢)	$43.26
Waste salvage (11.5 lb x 20¢)	2.30
Net cotton cost	$40.96
Test No. 5	
Cotton (110.2 lb. x 43¢)	$47.39
Waste salvage (10.2 lb. x 20¢)	2.04
Net cotton cost	$45.35

From these figures we see that it would cost the mill 4.39¢ per lb. more to produce cloth from the higher-grade Test 5 cotton than from the lower-grade Test 4 cotton.

What Is the Answer?

This cooperative test, involving all segments of the cotton industry, clearly demonstrates a dangerous trend in ginning procedures. It proves that the new additional machinery being added to the gins must be operated with great care and skill to prevent real damage to the cotton fiber.

If the trend is continued, the farmer and ginner may well lose their market. The mill, faced with a poorer raw material that will either turn out an inferior product or raise manufacturing costs, will be forced by competition to turn to a more profitable fiber.

Little Loom Motor

(*Continued from page 112*)

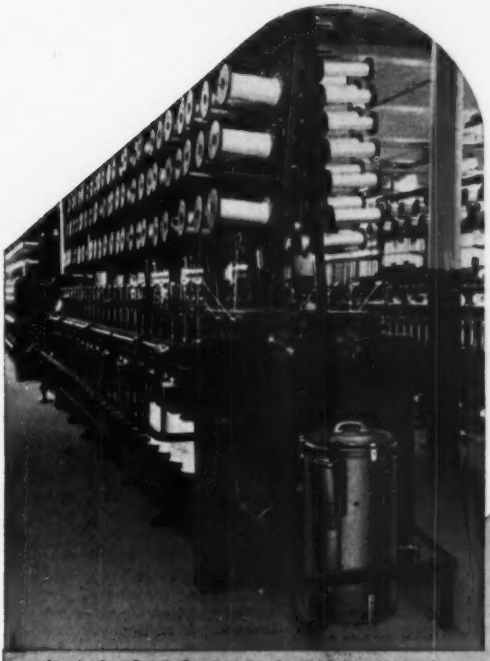
The new crankshaft-end-support bearing houses an antifriction bearing. The antifriction bearing eliminates the fiber washer and greatly reduces the friction on the loom drive when the loom is running.

No wear has been noted on the driving collar or the bearing since the changeover was made.

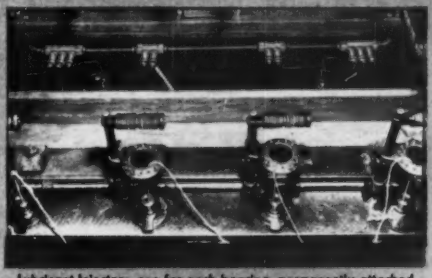
A lock nut and setscrew are placed in the crankshaft-end-support bearing to permit a large range of adjustments to the driving motion.

We Had a Big Problem, Too

In checking our loom speeds before we made the driving-parts changeover, we found that many of our looms



Lincoln CentrOmatic Pump serving the distribution system of lubricant injectors connected to machine bearings.



Lubricant injectors, one for each bearing, permanently attached to bearings by steel feed lines.

"Production Up 25% on FLYER TWISTER Equipped with a *Lincoln* Automatic Centralized Lubrication System"

W. R. Mahoney, Vice President
Premier Thread Company

"For a period of over a year we have had a Lincoln Centralized Lubricating System in operation on one of our Flyer Twisters. We are most pleased to advise that very satisfactory results have been obtained through its use.

"Our records indicate that the automatic feature of this type of system has enabled us *to maintain an increase of 25% in production* due to the complete elimination of downtime caused by the wearing out of parts from lack of lubrication. In addition the cost of repairing these parts has been almost entirely eliminated.

"We certainly have enjoyed working with the engineers of your company, and you can be sure that we are giving great consideration to installing your system on other machines and will most certainly contact your company when we have reached a decision along these lines."

W. R. Mahoney, Vice President
Premier Thread Company

Improved efficiency and higher production

In one Mill after another, Lincoln Centralized Lubrication Systems are helping to increase yield and reduce operating costs from existing facilities by assuring the application of the Right Lubricant, in the Right Quantity, at the Right Time, automatically.

Lincoln's Lubrication System specialists will be glad to work with you and recommend the time and money-saving Centralized Lubrication System best suited to your equipment.

Write for your **FREE COPY** *of* **CATALOG 80,** *describing and illustrating a complete range of* **22 Centralized Lubrication Systems.**

Distributed Nationally Through Leading Industrial Wholesalers Located in Principal Cities.

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LUBRICATING EQUIPMENT • • •

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NEW! fulltred® Floor Wax with Ludox*

Slipping Retarded with Ludox* Colloidal Silica in FULLER'S New Industrial Floor Wax

Above:—Wax film of approx. .0001" thickness, magnified 200,000 times to show how your feet press "Ludox" spheres into the larger wax particles.

For Factories, Institutions and Buildings

Now Fuller's water-base wax has been fortified with "Ludox" for added slip-resistance. "Ludox" particles are minute spheres *harder than wax* which are imbedded in the wax film. When the wax is stepped on, the hard "Ludox" spheres are pressed into the larger, softer wax particles. This creates a snubbing action which keeps the foot from slipping.

Fulltred needs no buffing . . . dries with high gloss. Water-resistant . . . freeze-resistant . . . spreads smoothly and easily. Safe for all types of floors. Available in 1 and 5 gallon cans and 30 and 55 gallon drums. For further information write today.

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dropped to as low as 100 ppm.—but they were all geared for 112 ppm.

Although we saw no connection between the driving-motion faults and our motors, we were having a lot of motors run hot.

An electrical engineer's report told us that our ¾-hp. motors (they're nearly new) should have been 1-hp. motors. After we received this report, we changed the ¾-hp. motors on a section of looms to 1-hp. motors. The motors ran cooler, but the looms did not run consistently at 112 ppm.

The Little Problem Solved The Big One

As we checked all our looms for speed, we found by accident that the looms with the antifriction bearings in the new drive motion were driving with cool motors and that the loom speed of 112 ppm. was constantly held.

We see one more improvement that we want to make to the driving motion: add an antifriction bearing to the inside of the crankshaft bearing where the bearing is in contact with the crankshaft.

Since we're using the new driving parts, we have lower loom-parts costs, better loom production—and we can use our old motors!

Weave-Room Organization

(*Continued from* page 98)

from the loom manufacturer should be given to each loomfixer to help the fixer cooperate with the supervisor in the training program.

Each loomfixer should have a set of loom gauges to adjust each loom motion. The supervisor of loomfixing can check with the fixers and after them more accurately and rapidly if gauges are used.

Supervisor Reports to Overseer

The supervisor of loomfixing should report directly to the general overseer of weaving. It is not enough for the overseer of weaving to get into the picture when trouble develops; it is essential today to prevent trouble before it starts, and a supervisor of loomfixing can keep the overseer informed on loom conditions.

The shift second hands, overseers, or assistant overseers should not have any authority over the supervisor of loomfixing. If standard settings are to be used on various constructions of fabrics over an entire weave room, only one man can be responsible for the development of these settings.

The opinions of each person should be valued because progress in a weave

Always Uniform

There is often no open-and-shut answer to slashing problems. But one thing is basic . . . only unvarying quality such as you get in Victor Mill Starch can insure smooth performance day after day.

That's why Victor is known as "The Weaver's Friend" throughout the industry.

For better penetration, stronger warps, less shedding . . . rely on Victor Mill and the conscientious help of the Keever man who serves you.

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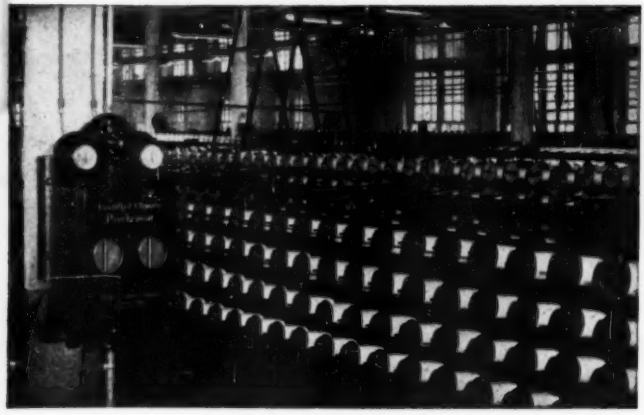
Controlled by the improved Certified Climate Psychrostat, Gradumatic Humidifiers operate continuously whenever moisture is needed.... A mere breath from each atomizer (as little as 2 pounds per hour) *at any time*, or as much as 16 pounds of fog-like vapor from each atomizer, if needed, *some of the time*. But Gradumatic humidification *all the time*.



Parks-Cramer Company

Fitchburg, Mass. PARKS Certified Climate Charlotte, N.C.

room is made through collective ideas; but the supervisor of loomfixing should test each new loom setting and approve the setting before any old settings are discarded.

The shift second hands, overseers, or assistant overseers should check their looms when the warps are out to see that the correct loom settings are maintained. The looms should also be spot-checked while the warps are in the looms.

2

The Lubrication Supervisor

A supervisor of lubrication should be appointed to help keep the looms in continuous operation. He should, if possible, be a man with experience as a loomfixer and should be familiar with the loom and its operation.

The supervisor of lubrication should be in charge of the oilers and should be responsible for the lubrication program. The careless lubrication methods inherited from the days of the slow loom with open bearings should be eliminated. Such poor methods are the result of using poorly trained, inefficient labor with little or no supervision.

An adequate oiling and greasing plan under the supervision of a trained employee will:

1. Prevent undue wear of loom parts
2. Reduce the cost of repairs
3. Prolong the life of looms
4. Postpone an expensive overhauling job
5. Keep the looms in production, without shutting down looms for overhauling.

Instruction sheets from the loom manufacturers should be the basis of the lubrication program. These instruction sheets make tentative suggestions as to the frequency with which each bearing should be lubricated, but a greasing schedule should be made out only after study and experiment.

How Often Should You Lubricate?

The frequency of lubrication must depend on the nature of the fabric being woven. Heavier fabrics call for more frequent greasing of some bearings.

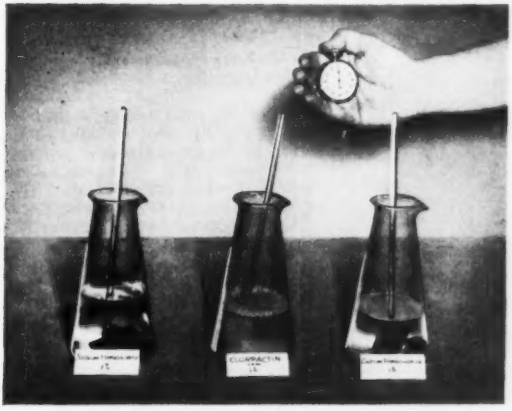
Looms weaving coarse fabrics that shed lint, waste, or starch require oiling twice as often as looms that weave goods that cause less substance to accumulate and clog the loom parts and absorb the oil.

The kind of oil used, the width and speed of the looms, the construction of the woven cloth, the combinations of the mechanisms on the loom, the

NOW... a brand new stripping and bleaching powder combining HIGH EFFICIENCY with MINIMUM LOSS OF TENSILE STRENGTH

CLORPACTIN* CXW

*Trade mark of the Guardian Chemical Corporation covering its line of oxidizing compositions.



THREE MINUTES AT ROOM TEMPERATURE!

The above picture shows the comparison between stripping actions of 1% solutions of sodium hypochlorite, CLORPACTIN CXW, and calcium hypochlorite, on dark blue rayon, at room temperature.

CLORPACTIN CXW is a white concentrated powder that is stable, easily stored and handled, and closely buffered to a pH of about 5.5.

TEST THIS PRODUCT AT OUR EXPENSE

Submit CLORPACTIN to actual tests in your own laboratory. See for yourself why trial users are re-ordering this product in quantity after exhaustive tests which indicated that CLORPACTIN...

- **acts instantly**
- **is effective in low concentrations**
- **is non-toxic**
- **produces a minimum loss of tensile strength**

A request on your company letterhead will bring a free sample and literature promptly.

GUARDIAN CHEMICAL CORPORATION
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you can lose plenty if you're

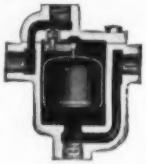
UNDER-TRAPPED

It doesn't pay to skimp on traps . . . especially steam traps. Water and air in steam lines reduces effective temperatures, wastes fuel and adds to maintenance costs.

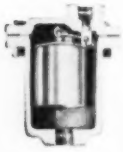
Clark Steam Traps have proven their outstanding drainage efficiency over many years of use in thousands of plants. Now, with the new Duo-Step double-drainage capacity feature, they can handle twice the condensate of ordinary traps.

It will pay you to see your Clark representative or write us for further information.

QUICK CLEANING STRAINERS. Remove dirt, scale and grit from steam, fluid and gas lines. Sizes ½" to 3" I.P.S.



SERIES "60" INVERTED BUCKET TRAP. Choice of horizontal or vertical inlet or outlet. For pressures up to 150 P.S.I. "Clark-lay" guided disc and seat.



CLARK "701"-D (DUO-STEP) TRAP. A forged steel trap for pressures up to 500 P.S.I. and temperatures of 750°F. Equipped with "double-drainage" Duo-Step leverage and venting, Clark-lay seats and discs. Pipe sizes ½" or ¾".

SERIES "80"-D (DUO-STEP) TRAPS. Cast semi-steel construction for pressures up to 250 P.S.I. and temperatures to 450°F. Equipped with Duo-Step Leverage and Venting, Clark-lay seats and discs. Pipe sizes from ½" to 2".

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THE HOME OF DUO STEP LEVERAGE

The complete line of dependable fluid controls

weather, the climate, and many other conditions can affect rules for oiling looms. The supervisor of lubrication must study these conditions to schedule his oiling program.

The foundation of a good lubrication system rests upon work done while the warp is out. The oil holes should be cleaned thoroughly, and all lint and superfluous oil and grease should be wiped off. Each oil and grease hole should be greased. This program calls for supervision.

The maintenance of regular oiling and greasing during the period that the warp is running also calls for supervision.

Like the supervisor of loomfixing, the supervisor of lubrication should report directly to the general overseer of weaving and should not be responsible to any other person.

The combined efforts of a supervisor of loomfixing and a supervisor of lubrication can increase the efficiency and quality performance of any weave room.

Card-Grinding Methods

(*Continued from page 119*)

the collars (one at each end of each roll) by means of setscrews, fasten a pulley to the shaft of each worker or angle stripper, and put belts on the pulleys. There are three floor grinders, and each has space for two workers or angle strippers. Bearings are oiled, and the workers or angle strippers are then ready for the clother to set them to the grinding wheel.

A monorail would help. Proper ratio between grinder and card bearings would save moving collars.

Set Workers or Angle Strippers to Grinder

This operation is performed by the clother.

Adjust the workers or angle strippers to the grinding wheel visually and by sound so that grinding is done properly. Adjustment is made by turning a 2-in. handwheel on a threaded shaft. The grinding wheel must traverse the length of the grinder several times during the setting to be sure that grinding is even.

Hand-Card Workers or Angle Strippers

Either the clother or the grinders use hand cards to clean imbedded waste from workers or angle strippers. This operation is usually done when the clother completes his setting.

Use an electric drill with a special chuck to turn the workers and strippers. Hold the hand card against the revolving roll for quick stripping.

Tending Grinders

Grinders or clothers are in attendance while floor grinders are running. Occasionally bearings are oiled or a check is made on workers by running the hand over the surface without stopping the

grinders. After the waste embedded in the worker or angle stripper has been removed by hand carding, one grinder cleans the area with a broom or air hose.

The grinder makes no decision regarding the condition of rolls being ground. This decision rests entirely with the clother.

Usually a lot of time is wasted with a broom in hand. Let a sweeper clean.

Stop To Inspect Grinding

Whenever the clother feels that grinding is complete, he stops the grinder and inspects the workers or angle strippers. If not satisfactorily ground, the rolls are started again. If new clothing will be required, the clother notifies grinders to remove them from the floor grinder before further grinding.

If satisfactorily ground, the rolls are marked with chalk to signify work to be done at the clothing area.

Remove Workers or Angle Strippers From Grinder

When the clother gives instructions to remove workers or angle strippers from the floor grinder, the grinders push a truck beside the grinder, loosen the collars on the shafts, remove belts and pulleys, lift rolls onto truck, and move the truck away from the grinder.

A monorail would speed this operation.

CLOTHING

Truck to Clothing Area From Grinders

When the worker or angle-stripper clothing needs repairing, the trucks are pushed to clothing area by grinders, and the area is cleared and made ready for reclothing. This distance is about 110 yd.

Locate centrally. Usually this area is some distance from the cards because the grinders prefer an area free from fly.

Walk to Clothing Area From Grinders

Clother walks to the clothing area with the grinders, obtains necessary tools from a box at the roll stand, and assists in getting the area in working condition.

Keep duplicate tools where needed. Save walking.

Reclothing

Grinders lift a worker or angle stripper from the truck and put it on a rack while the clother locates the clothing and opens the box by loosening screws.

The clother removes tacks from old clothing with a claw and discards the tacks. One grinder stands at each end of the roll to be clothed and fills the hole from which the tack was removed with a wooden peg. The clother pounds the peg into the hole with a hammer. (There are ten holes in a worker, five in an angle stripper.) A chalk mark is made beside each peg to facilitate tacking. The clother then pulls off old clothing onto the floor. When the other end is reached, the same procedure is followed, but the other grinder helps the clother. A grinder picks up the old clothing and throws it aside.

The clother removes the end of the new clothing from the box and makes the taper with a hooked tool by pulling some of the wire from the clothing. The grinders wait for the clother.

The new clothing is pulled from the

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1. EASIER, FASTER LOOM INSTALLATION...

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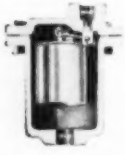

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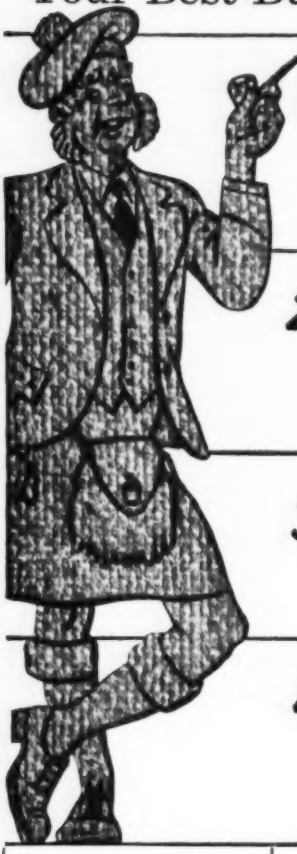

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For many years, producers and users alike have accepted Bemis' grading of Indian burlap as the standard for the industry.

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box by a grinder and the clother feeds it without tension onto the roll to be covered while the third man helps the clother turn the roll until it is covered. This operation is just to measure the length of clothing required. The wires are removed from the clothing for about 4 in. at the end, and the clothing is cut. The grinders wait.

The end of the new clothing is clamped to a strap on a drum, and one grinder turns the drum to wind the clothing onto it while the clother holds back on the roll to prevent backlash. The other grinder waits.

The end of the clothing is tacked to the roll to be covered at one point only.

Pressure is applied to a brake on the drum by throwing a lever. A gear is fastened to the shaft of the roll so that it meshes with a gear on a hand crank. The clother guides the clothing onto the roll as two grinders turn the roll by means of the crank.

When the roll is covered, a taper is made at the end of the clothing and the clothing cut at the proper place. One grinder sweeps the floor. The clothing is then tacked as follows:

Using an awl, the clother punches a hole through the clothing into the wooden peg opposite the chalk marks that were previously put on. A grinder puts a tack into the hole, and the clother hammers it in while the other grinder waits. The same thing is done at each chalk mark around the roll. The edges of the clothing are trimmed (same procedure as at the other end), and the first grinder waits. The clother makes out a ticket for the wire as the grinders loosen the collars and place the roll on the truck.

The box of wire is re-covered tightly and returned to the supply about 10 ft. away.

Too many manhours are spent waiting for someone else to do something. Grinders should be occupied with getting the next card started while the clother does his work.

Rewinding Clothing

This operation is performed by the clother and the grinders.

The procedure is the same as for new clothing but it is not necessary to locate and open the box of wire or to close and put it away afterwards. Only one end has to be tapered, tacked, pegs put in holes, etc., because the other end remains fastened.

Return to Grinder

The clother puts away his tools and walks to the grinder area.

The grinders sweep the area, if necessary, and push trucks to the grinder area.

Have a lower-priced sweeper do the sweeping while each skilled man devotes his time to his specialty.

Grind New Clothing

Rolls that were reclothed are again placed on the grinder, set, tended, inspected, and removed as outlined in previous elements. Rolls are ground 10 or 15 min.

Stop Card

After 1½ hr., the clother stops the card

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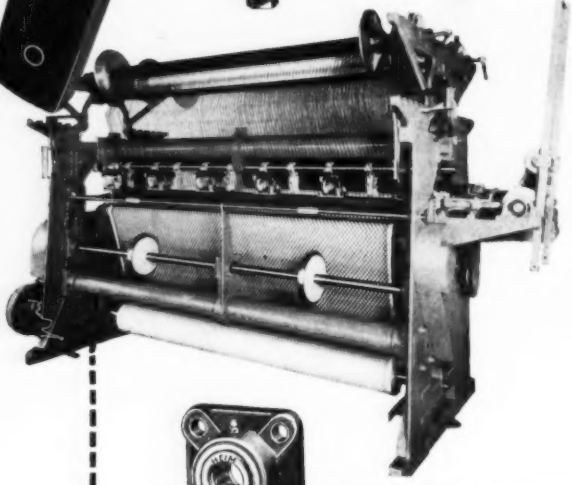

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Bearings and Sweepsticks for the Textile Industry.

THE HEIM COMPANY

FAIRFIELD, CONN.

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and examines for sufficient brushing.

It takes 1½ min. for the cylinders to stop after the power is shut off.

An electric brake on the motor drive would stop it sooner.

Prepare To Remove Brushes

Grinders:

Remove the side belt that drives the breaker cylinder

Remove the drive belt with a prying-out hook

Move strippers S5 and S8 back to position

Remove the waste from the stripper bearings and clean the worker bearings

Keep belts away from bearings

Remove the brush belts

Move the two cylinder pulleys back to position and the two brush pulleys back to the strippers

Move breast worker W2 or stripper S3 out of the way to allow the brush to come out

Remove collars and sleeves

Previously mentioned steps would eliminate many of the above elements.

Clother:

Examines all cylinders

Remove Brushes

Grinders:

Push an empty truck from the grinder to the feed end of the card

Remove the two brushes with the special pipes and place them on the truck

Push the truck to the grinder area

A monorail would help and also provide live storage of grinders, rolls, etc.

Return Angle-Stripper Bearing Boxes to Normal Position

This operation is performed by the clother.

The angle-stripper bearing boxes were moved from their normal positions to receive the brushes. The boxes are now returned to their normal positions. The two boxes on the finisher cylinder are removed by removing one nut and readjusted by means of two locknuts and two setscrews. Those on the finisher are not removed, but a large adjustment is necessary.

This entire operation would be eliminated by having the proper correlation between angle-stripper and brush sizes.

Return Workers and Angle Strippers to Card

The grinders perform these tasks.

Push the truck with workers W6, W7, W8 and angle stripper A2 to the doff end of the card.

Lift rolls with pipes and put into bearings.

Push empty truck to grinder area and other full truck from grinder to the feed end of the card.

Lift workers W3, W4, W5 and angle stripper A1 into bearings.

Return empty truck to the grinder area.

Live storage on a monorail would eliminate the above steps.

Set Angle Strippers

As soon as the grinders have the angle strippers in their bearings, the clother sets the angle strippers to approximate set-

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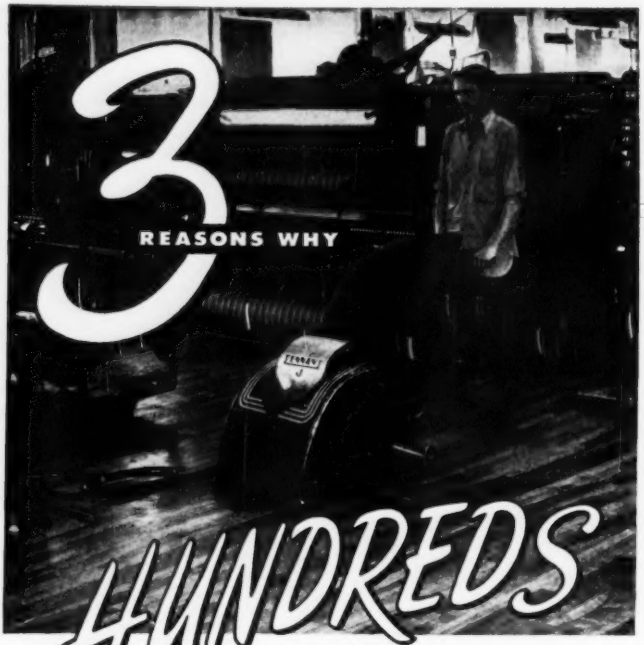

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OF MILLS USE THE
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OF FLOOR MAINTENANCE

Its cost-saving performance and ease of use have established TENNANT as *THE accepted floor maintenance system of the U.S. textile industry.* This unique acceptance is due to these practical advantages . . .

1. CUTS FLOOR MAINTENANCE COSTS

You save 4 ways—in *manhours*, by cleaning faster in one operation with 1 man; you cut *accident costs* by DRY-cleaning (no wet, slick floors). You avoid needless *floor repair costs* . . . and reduce *stock losses* from snags, splinters and soilage.

2. EASIEST TO USE: eliminates scrubbing!

Works like magic! You get rid of dark, rough, oil-soaked fibers . . . and have a smooth, bright, *hardened* floor surface that resists dirt. Stays clean longer! Ends costly, harmful scrubbing and wet-mopping.

3. FITS YOUR MILL'S SPECIFIC NEEDS

Your TENNANT System is individually selected and planned, 100% *specialized* for your mill. Assures you of best results. Personal installation and periodic inspection . . . *without charge.*

ONLY DAILY CARE needed is fast, low cost sweeping. Oil, dirt and dust do not cling to the smooth, hard surface of a **Tennantized** floor. Dirt sweeps off easily . . . Keeps your floor bright and attractive.

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Creators of the TENNANT SYSTEM OF FLOOR MAINTENANCE—Manufacturers of Equipment & Materials for MAINTENANCE OF FLOORS, DECKS, ROOFS, HIGHWAYS

tings. (They are not set accurately until all belts are on.)

Preparations for Setting the Card

The clother makes a rough check of the clearance so that any large adjustments can be made before the belts are put on.

The grinders put platforms between the hopper and the feed rolls.

Not needed with monorail system.

Then they tighten all collars and replace all belts.

Setting the Card

The clother makes all settings, first at one end, then the other, and then readjusts at both ends until settings are satisfactory. Gauges are used to obtain correct settings.

Set Angle Strippers

The clother sets the angle strippers to the cylinder and doffer according to specifications.

This adjustment involves two locknuts and two setscrews at each bearing.

Set Doffers to Cylinders

The clother uses a gauge on the breaker and a gauge on the finisher and sets each doffer to its cylinder. Two bolts on each end are loosened to permit the doffer to slide. If the drive side of the doffer requires adjustment, a large gear (3-ft. dia.), another small gear, and a belt must be removed by the grinders. After the proper setting has been made, the grinders reassemble the gears and the belt.

Set Workers and Strippers

The six workers are set to the cylinder, and adjustments are made with two locknuts.

The six strippers are then set to the cylinder in a similar manner.

Finally the six workers are set to the six strippers by adjusting two setscrews.

Workers W1 and W2 are set to the breast cylinder.

Prepare To Start Card

After all settings have been checked, the clother:

Puts brush on the belt with one bolt
Puts the shipper handle on with one bolt
Prepares the belt by unrolling it and cutting it if necessary

The clother and the grinders together:

Put the main drive belt on (a ladder is needed). One grinder holds the ladder, one climbs the ladder and puts the belt on the upper pulley, and the clother puts the belt on the idler pulley after hooking the ends together
Put belt on doffer comb
Put the ladder away

A motor drive would eliminate all of the above steps.

Start Card and Check Running

The clother starts the card. One grinder stands at each side of the card to make sure that there is no serious rubbing between any of the cylinders.

The clother makes any necessary changes in adjustments and observes the running. When the clother is ready, the grinders

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✓ Non-volatile—applied and controlled with ease on standard resin-finishing machinery.

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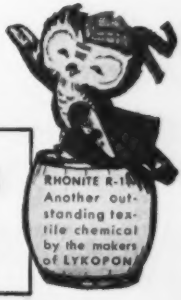
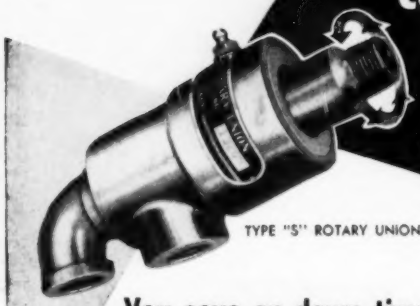
Representatives in principal foreign countries



ROTARY UNION

(REG. TRADE MARK)

a revolving steam connection



TYPE "S" ROTARY UNION

PIPE SIZES 1/4" THROUGH 3"

You save on down-time and maintenance

Many textile mills report that their ROTARY UNIONS have been in daily service for three years* or more without requiring tightening or adjusting service of *any kind*, and without causing one minute's down-time on dry cans, calenders, slashers, or printing and coating machines. Compare this with the high cost of constant tinkering and adjustments required by many other steam connections for revolving shafts and drums. Add up the increased production you get by the complete elimination of down-time, and you have compelling reasons for giving ROTARY UNIONS an immediate tryout. While ROTARY UNIONS are competitive in cost, they excel in performance.

Send us your order for enough ROTARY UNIONS to equip one of your machines. Or write Dept. 10W for our catalog or contact our nearest office.

* Guaranteed for one year's normal use.

SHOWN AT BOOTH 410
SOUTHERN TEXTILE EXPOSITION

"Where *Good Connections* Count"

PERFECTING SERVICE COMPANY

332 Atando Avenue (Home Office and Factory) Charlotte, N.C.
Atlanta, Chicago, Cleveland, Philadelphia, Providence, NewYork, Montreal, Toronto

put on the feed belts and allow stock to run through card.

Waiting for Acceptable Sliver

When stock is delivered from the card it is very dirty because of the kerosene that is still present on the cylinders. The clother observes the running condition of the card and waits until he decides the sliver is clean and acceptable for production.

The grinders, who are also waiting for acceptable sliver, prevent wool from going under the card, and, when delivery is sufficient, get a truck and feed sliver into it. (This sliver is rescoured.)

Move Baller Head and/or Calender Rolls

If the baller head is not to be moved but is not to be used, a gear inside is loosened to make the head inoperative.

If baller heads are to be moved, the same procedure described earlier is followed.

If there were enough baller heads, none would have to be moved.

Other Working Elements

There are several duties that are performed at odd times by the clother and/or the grinders. These are:

Oiling the card
Cleaning the card with an air hose after standing overnight
Consulting the overseer and making trips to the belt shop, supply room, etc.
Making repairs to the card or other equipment
Cleaning the doffer cylinder after brushing if necessary

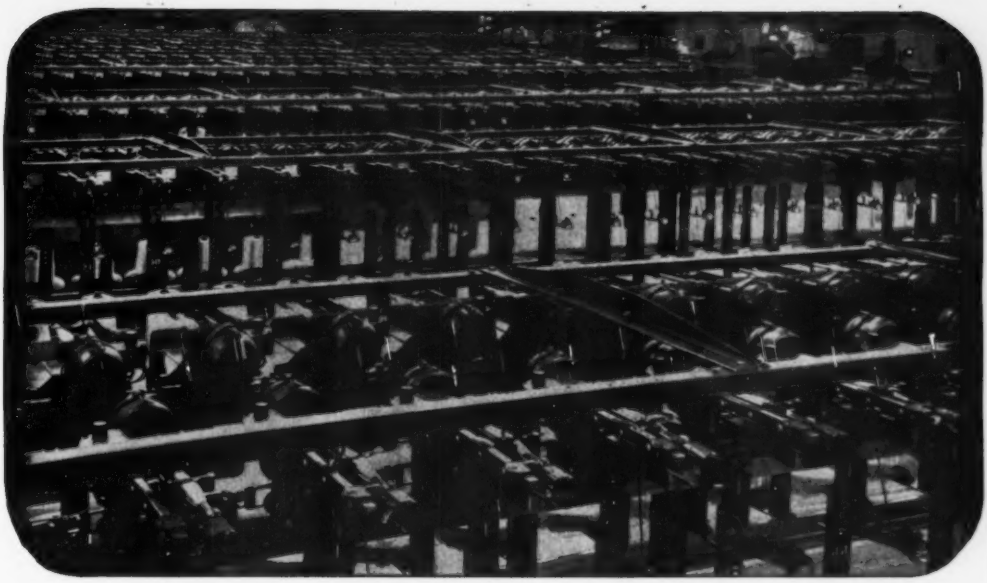
It is well to have extra duties to keep the grinders busy in their spare time. If you find they have too much spare time and are doing too many jobs that should be done by lower paid help, you should have fewer grinders on the job.

Pointers for Supervisors

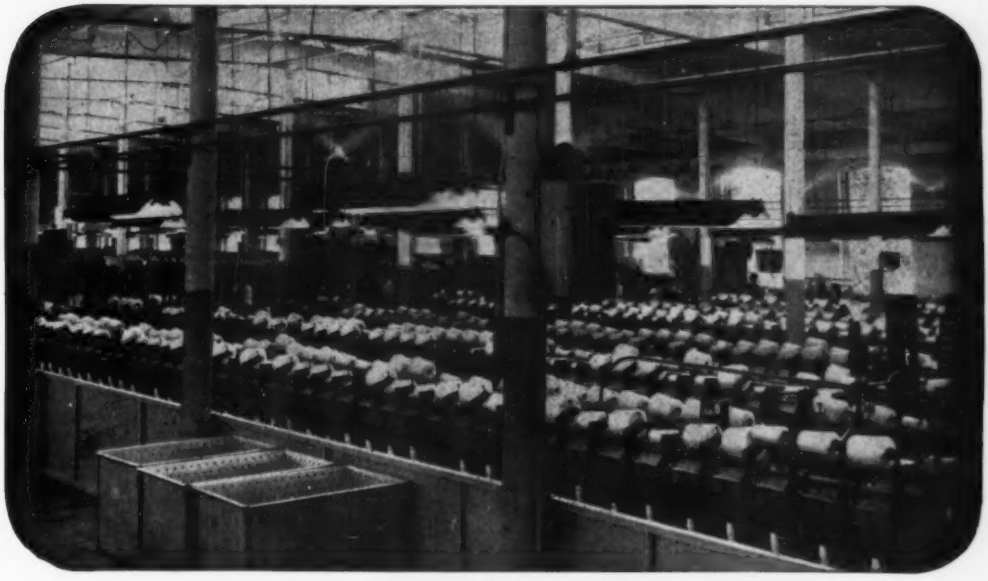
(*Continued from page 149*)

to refer to objective physical or health standards for the job. Another point to remember: Have you tried to find lighter work for the employee? If the policy of your company is opposed to this principle, better be prepared to prove that it is something agreed to by the union directly or by implication. Arbitrators are a human lot, and you must show good reason for not doing what they consider should come naturally to an employer.

To summarize, an employee's health is to a great extent the concern of the employer, but when challenged by the union, the employer must stand ready to justify his concern by basing it on sound management reasons. If ever he is taken to arbitration for not permitting an employee to work because of bad health, he'll sure as shoot-



ABBOTT AUTOMATIC QUILLERS PRODUCE MAXIMUM PRODUCTION PER OPERATOR AT LOWEST COST. 1000 TO 2000 BOBBINS OF WOUND FILLING PER HOUR PER OPERATOR.



ABBOTT AUTOMATIC WINDERS REQUIRE ONLY ONE OPERATOR PER MACHINE. 800 TO 1000 BOBBINS WOUND ONTO CONES OR CHEESES PER HOUR PER WINDER.

ABBOTT MACHINE CO., INC.

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SOUTHERN OFFICE, GREENVILLE, S. C.

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INTERLOCK
Multifeeder and stripe or check pattern machines
with all the unique features

9"-30" DIAMETERS
20-24 CUTS
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Send for full details, to the builders of more than 7000 Interlock machines operating successfully in almost every country in the world.
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ing lose if he doesn't introduce the factors outlined above. And if the arbitrator isn't a strong believer in the management-prerogative doctrine, he may lose anyhow. Arbitrators by no means go down the line for employers on the subject.

Round Table

(*Continued from page 171*)

American is an example to all nations that seek to stabilize their economy. That rise has been due mostly to a rush of United States investment money. This money sought out Canada because Canada has minimized restrictions on international trade and has created a climate favorable to investment of venture capital.

Nations elsewhere have sealed their doors by extreme nationalism, currency restrictions, abnormal tariffs, government controls and government monopolies, threats of property seizure, and the like. Many such nations are looking to Point Four for a solution to their problems.

CHAMBER OF COMMERCE OF THE UNITED STATES
Washington, D. C.

WE NEED SOUND MONEY

Dear Editor:

Unstable money is one of the major causes of the constantly increasing demand by labor for higher wages. As the purchasing power of the dollar goes down and the laborer and his family find that his pay envelope will buy fewer groceries, clothes, and other necessities, he urges his union leader to demand wage increases; and thus the treadmill of inflation is kept turning without solving our present economic problem.

If our money were stable and did not vary too much in what it would buy, we would not have the present race for more and more wages. When workers get in this uneasy frame of mind, they lose confidence in their government. They do not know what to do to keep ahead of the cost of living. What we need to do is to pull together. We are all in the same boat, rich and poor. We have got to pull together to get sound money. We must stop this form of cheating with money that does not stay put in value.

The cause of most wars in modern times may be traced to inconvertible, unredeemable, and depreciated money. It is idle to think of universal peace without re-establishing stable, convertible money as the cornerstone of the world economy.

Every despot and ruthless dictator has realized that dishonest money will do more to liquidate the strength of a nation than an enemy army capable of destruction. Unreliable money is a fundamental cause of disunity, distrust and despair. Modern commerce, modern civilization, and modern life depend upon a stabilized, reliable, and trustworthy medium of exchange.

Our money has proved so unstable and has been lowered in purchasing power because the government has circulated

IT'S UP TO *you* !

You can, of course, buy cheap yarn cheap but don't expect CROSS yarn to be as cheap. After all, it takes fine quality cotton to make fine quality knitting yarn. Every cone of CROSS yarn is produced from the finest of raw cotton . . . Strict Middling. So if you want fine quality yarn, you cannot buy better than the best . . . CROSS combed or double-carded yarn, bleached or dyed.

NOTE THIS

CROSS can match your shade or you can select from more than 700 shades shown in the CROSS color catalog. What's more, the CROSS laboratory has on file the formula for more than 2000 shades. No wonder so many leading knitting mills depend entirely on CROSS dyed cotton knitting yarn!

CROSS COTTON MILLS CO. KNITTING YARN MARION, N.C.

Cross Cotton Mills Company

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4801 Locust Street
Philadelphia, Pa.

For more information, write direct or use Reader Service post card.

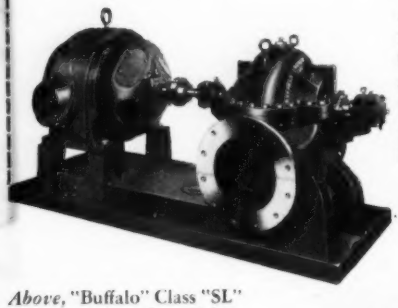
"Buffalo" Tips on Better Pumping

REDUCE FIRST COST BY CHOOSING TOP RECOMMENDED PUMP SPEED

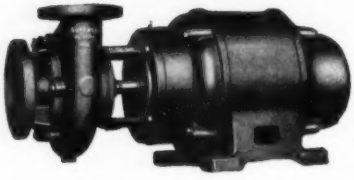
Generally, the higher the operating speed, the smaller the pump you need for a given capacity. This saves on first cost and critical materials so badly needed today. On the other hand, ordering a pump on the basis of having a large margin of capacity can result in purchasing a wastefully large pump. This is why it is so important to give your pump supplier all possible facts about your pumping job—specific gravity, temperature and chemical analysis of liquid to be pumped, discharge head in feet, gallons per minute.

A Caution

OVERSPEEDING a pump naturally shortens its life, and is even more wasteful than using an oversize pump. Thus, the driver speed should be in line with the supplier's recommendation. "Buffalo" engineers are ready to advise you as to the right pump for your expected conditions—a quality-built "Buffalo" Pump of the exact size and construction consistent with best service and economy on the job. Write us *today* about your pumping problem!



Above, "Buffalo" Class "SL" Double Suction for efficient clear water service. 10 to 14,000 gpm capacities. Write for Bulletin 955-P.



Right, "Buffalo" Close-Coupled Pumps are compact, durable and assure permanent shaft alignment. Bulletin 975-B.

"Buffalo" BUFFALO PUMPS, INC.

184 MORTIMER STREET BUFFALO, N. Y.

Subsidiary of Buffalo Forge Company

Canada Pumps, Ltd., Kitchener, Ont. Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

more dollars due to the fact that it could not pay its bills any other way, or had not the courage or the character to do so. It has spent more than it has received so it has to put out more bonds and go further into debt, and this condition in turn causes it to put out more money.

Bad money brings on trade restrictions—restrictions on exchange, on exports and imports. Bad feelings ensue. Everything is done but an attack on the root of the problem. By spending more than it has and trying to pay by issuing more money, a government lets inflation continue. Each dictator knows this and takes advantage of it.

An international sound-money program will do more to stop Stalin's ideology from spreading than untold air or foot divisions. Sound money engenders confidence, courage, and trade. It gives you something to defend. It gives you a respect for honesty. It is a virtue builder. Unsound money is the cesspool in which economic disease and human conflict is spawned. Sound money is the flagpole for freedom's banner.

HENRY H. HEIMANN
National Assn. of Credit Men
New York, N. Y.

Selecting Second Hands

(*Continued from page 135*)

correspond with the Promotion Group. The potential promotees were about equally divided among the three groups made from the ratings. Many of these men, while possessing great potentialities, had relatively little experience and were not contributing as much to their present jobs as some of the others with greater experience but lesser potential.

Testing Was Done by the Author

The testing was done by the author so that the second hands would not feel that they were directly or indirectly being forced to participate. The conditions were controlled as specified by the test instructions. The purpose of the test was explained to the men, and they were told to feel free to take it or not as they saw fit. Every second hand in the entire plant volunteered to take the test, and some took it on their own time.

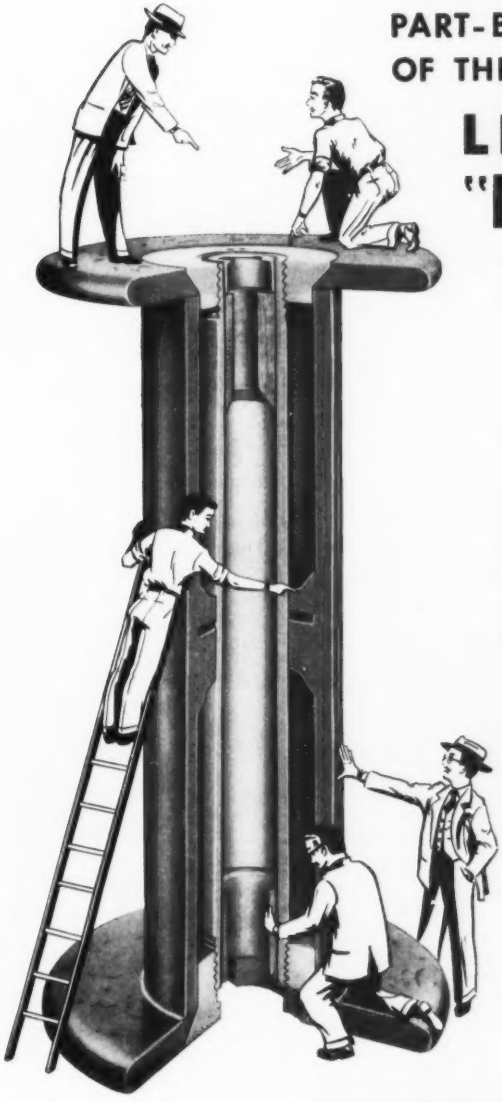
Testing Proved To Be A Good Training Device

The test-taking itself proved to be highly stimulating and provoked much thought and discussion. One second hand expressed the prevailing attitude by saying, "Now there's a point I never thought about." So the testing turned out to be an excellent training device as well as a measuring instrument, although this result was

You are invited

TO RECEIVE A CONVINCING PART-BY-PART DEMONSTRATION OF THE NEW

LESTERSHIRE "NB" BOBBIN



From start to finish this new bobbin is revolutionary in design.

●

Let us show you why it does not require dynamic balancing.

All parts are manufactured of stable materials, and to close concentric tolerances. As a result, when assembled, the new "NB" Bobbin is actually *in dynamic balance*, thus saving dynamic balancing costs.

Let us show you how much stronger it is throughout **because the aluminum center tube and beveled bushing give the necessary support to all parts of the bobbin, providing the safety factor required for the high tenacity yarns on the market today—and that will be on the market tomorrow.**

Let us show you how parts are replaceable **when worn, or when there is some change in bobbin use; how special "Phenolite" (laminated bakelite) bushings maintain dimensional stability when steamed; and many other unique features.**

●

Send for sample "NB" Bobbin, and see for yourself how it's different; how it's better; how it can save you money.

LESTERSHIRE SPOOL & MFG. CO.

Specialists in the production of bobbins to meet individual requirements

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Further patents applied for.

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This wooden dye house roof has defied rot since 1924!

● The constant presence of steam and condensate had made the dye house roof a continuing source of maintenance expense to Belding-Corticelli at Putnam, Connecticut.

But—in 1924 they replaced the old roof on the dye house with "Wolmanized"* pressure-treated lumber. The results speak for themselves . . . as does Mr. L. L. Brown, Belding-Corticelli's Master Mechanic, ". . . still in good condition—taking a beating of steam and condensate every day".

"Wolmanized" lumber can solve many of your maintenance problems caused by the moisture that is always present in dye houses and bleacheries. Ask your architect or plant engineer about genuine "Wolmanized" *pressure-treated* lumber . . . or write for complete information and the folder, "Wood Preservation".

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Wolmanized
PRESSURE TREATED
Lumber

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not anticipated. The act of completing the test alone was worth the time and money.

Standards Can Check Any Trait

From the standards it is a simple matter to determine the extent to which any given trait is indicative of efficient supervision. For example, to determine the relationship of marital status to efficient supervision, the number of married men in the Upper Group is compared to the number of married men in the Lower Group (and Promotion Group vs. Non-Promotion Group).

Differences Can Occur By Chance

A word of caution is in order at this point. When any two groups are compared, it must be remembered that differences can occur by chance. A statistical procedure must always be used to determine the odds that the difference between the groups might have occurred by chance. In statistics, the odds are called the "level of confidence," and the 1% level of confidence means that the odds are 99 to 1 that the difference is not due to chance and therefore is a significant difference.

Knowledge of Human Relations Is a Valuable Trait

How Supervise?, a test by Remmers and File, measures understanding of the psychologically best methods of supervision. The results obtained from this test were compared to the standards to see if it could differentiate, on the basis of this trait, between the second hands in this plant.

On this test, the average score of the Upper Group was 3.81 points higher than the average score of the Lower Group. This difference is significant at the 1% level of confidence.

The average score of the Promotion Group was 4.90 points higher than the average score of the Non-Promotion Group (Fig. 1). This difference is significant at the 1% level of confidence.

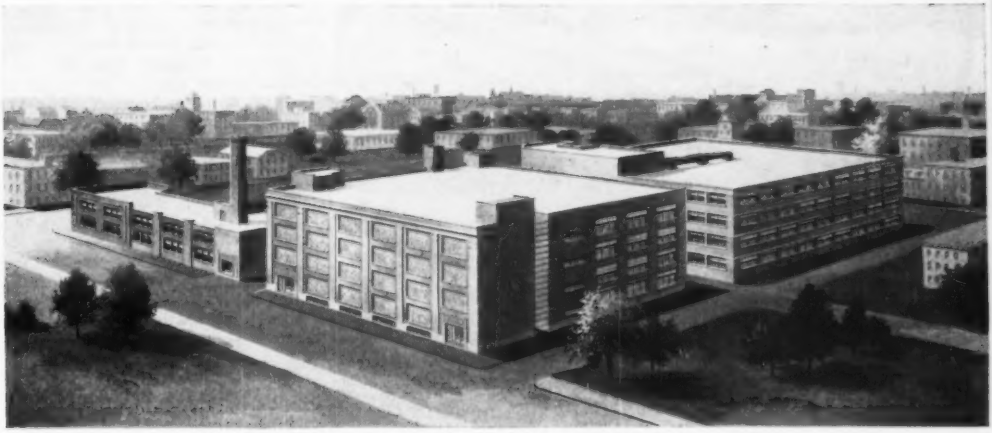
As a further check, the second hands who scored below the average of the test "norm" group (i.e., the group originally used by Remmers and File to make sure the test was a good test) were checked against the second hands in the Lower Group. Every second hand who scored below this average was found to be in the Lower Group.

These results convinced us that *How Supervise?* was measuring a trait that was connected with good supervision. If the test distinguished between the working second hands in this plant, it would certainly be ex-

AND NOW... IN CONCORD, N. C.,

A NEW OSCAR HEINEMAN PLANT...

...which, added to the facilities and production of our Chicago plant...



... MEANS that Oscar Heineman's service in producing the finest-quality hosiery and tricot knitting yarns and filling every throwing need in synthetic and combination fibers will be better than ever.

With understandable pride, we're telling the industry about our new Concord plant, partly because it represents a significant expansion for us but principally because for expert, economical production, it has everything. It is completely air conditioned, has the latest throwing equipment and is strategically well located. It has everything it takes to give you quality, speed and efficiency.

OSCAR HEINEMAN CORPORATION

Division of Aetna Industrial Corporation

DONALD G. BREWSTER, ***President and General Manager***

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String-guards and Neoprene Rubber Treads make these casters "super" for use in textile mills. Easy Rolling plus a Darnell-designed bearing seal to keep out foreign matter provide economies in maintenance and operation appreciated by mill owners and operators alike.

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pected to do an even better job of weeding out really poor applicants.

Knowledge of Human Relations Has To Be Put Into Practice

Since *How Supervise?* measures a second hand's understanding of the best methods of supervision and not necessarily the degree to which he puts it into practice, another test was necessary to get a measure of his general ability or how quickly he can size up a situation and make the necessary reactions. *The Adaptability Test*, by Tiffin and Lawshe, stood the acid test of being checked against the plant standards.

The Upper Group averaged 4.33 points higher than the Lower Group (Fig. II), and the Promotion Group averaged 5.30 points higher than the Non-Promotion Group. These differences are significant at the 1% level of confidence.

Combined Scores on Both Tests Give More Proof of Selectivity

As a further check on the value of these tests, a position for each second hand was charted from the combined results of the two tests. The highest third of the second hands on this chart was compared with the upper third on our standard list, which has been called the Upper Group. We found a 77.7% duplication between the two lists. Four men in the upper third on this chart were found to be in the Lower Group, or lower third of the ratings. Three of these four men were classed in the Promotion Group, however, and were in the Lower Group because of inexperience. Thus only one second hand in the upper third of the combined-score chart was not predicted by the standard.

The Next Step Is To Try Out Tests on New Applicants

Before these tests can be used for selection, they must be tried out on newly hired second hands. The test results on these new second hands will be filed away. At a later date, a check will be made to see if the predictions of the tests were mostly correct. In the meantime, other traits that might predict successful supervision will be investigated.

Testing, An Aid to Selection, Is Not the Final Answer

Personnel testing is not the final answer to personnel selection. Tests should be used to improve present procedures—not to replace them. The tests themselves have to be tested in each plant; there are no short cuts.

For more information, write direct or use Reader Service post card.

Could you use more efficiency?

If your weave room is air conditioned with an evaporative cooling system, you can step up your efficiency even more. And we think we have just the machine to do it!

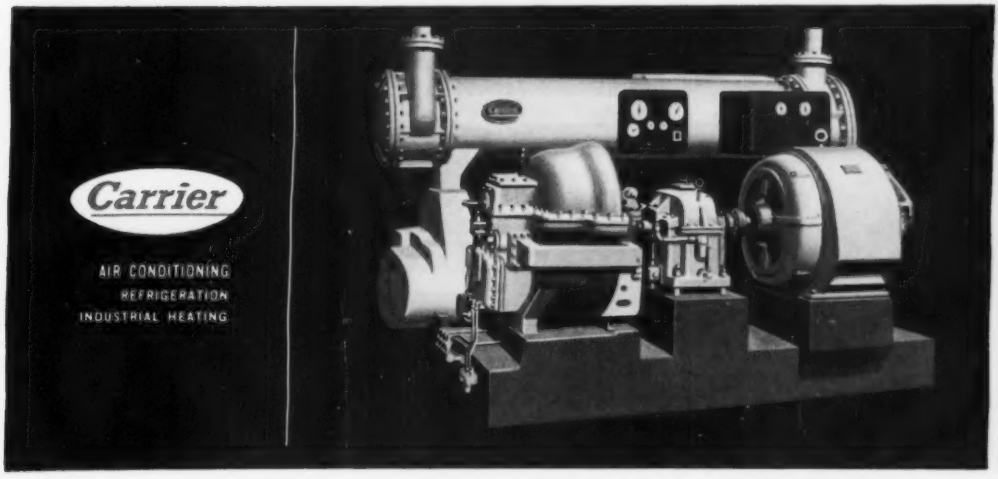
It's a Carrier Centrifugal Refrigerating Machine. It's the machine that supplies refrigeration for air conditioning. So that you have *absolute* control of both temperature and humidity—regardless of outside conditions.

Without positive control of mill conditions, high-speed looms can't perform efficiently. Fluctuations in temperatures cause expansion and contraction of metal parts. Tolerances are violated, causing sheering and smashing, with lots of down-time.

And, of course, modern fibers require the absolute control that modern air conditioning gives. You'll find that air conditioning by refrigeration makes sensitive acetate and viscose yarns easier to handle, with little fuzzing and shredding.

So in the end, weave rooms with modern air conditioning consistently operate with top efficiency.

Your evaporative cooling system can have refrigeration added to it. Write for booklet. Carrier Corporation, Syracuse, N. Y. . . . *for 50 years — the people who know air conditioning best.*



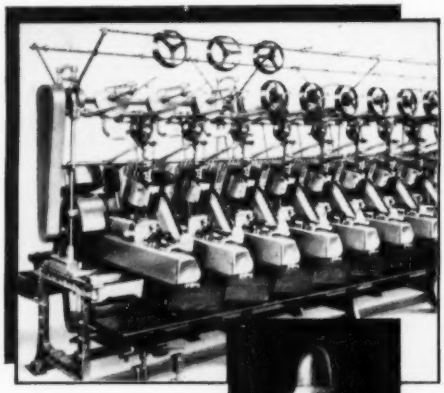
The Carrier Centrifugal Refrigerating Machine. In 30 years, Carrier has built more than anybody else. Each of the existing 2500 machines is backed by the largest national service organization in the industry.

Another Original SCHWEITER Design

for *Rewinding* silk, rayon, nylon and crepe on the...

AUTOMATIC FILLING WINDER type MSK

This machine consists of a number of independent winding units, each individually driven, assuring an unusually high degree of efficiency and production. It is equipped with a multi-cell magazine, and a special creel permits rewinding directly from spinning cakes.



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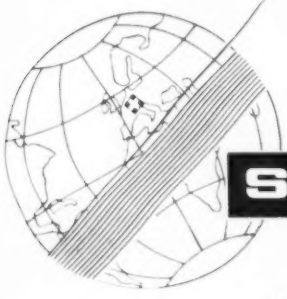

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HORGEN (Zurich) SWITZERLAND

Sole Agents for the United States and Canada

WHITIN MACHINE WORKS • WHITINSVILLE, MASS.

Pad-Steam Range

(Continued from page 106)

high speeds, for the immersion time and the saturation time of the fabric are very limited at best. On lightweight fabrics such as print cloths and low-count broadcloths, a single-bowl pad may be entirely satisfactory, especially if the machine is not operated at high speeds.

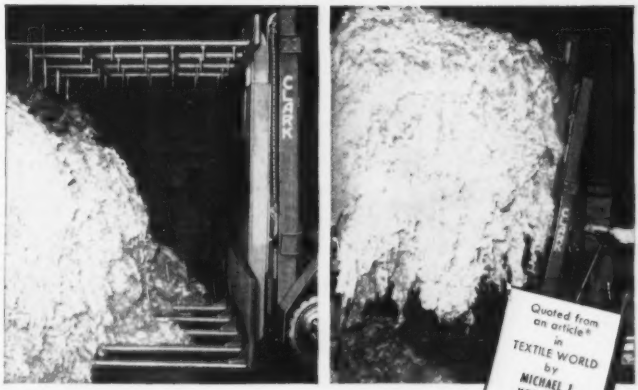
The two-bowl pad has certain advantages. Generally, it is easier to change rolls when necessary, and the pad box can usually be designed so that it holds less dye than does a three-bowl double-immersion type. These advantages, though, are usually more than offset by the more level appearance, better penetration, and ability to run at high speeds of the three-bowl, double-dip type of pad.

There are a number of different methods for applying pressure to the nip rolls of the pads. There is much to be said for the old type of counterweight and lever-set pad, because pressures from side to side can easily be adjusted by changing the weights or position of the lever arms. Many pads today employ air-set or spring-loading on the nips. It is important with any type pad for the dyer to be able to vary the set on either side of the pad. The condition of the rolls, unequal cloth penetration, and other reasons, sometimes unexplainable, cause the dyer often to encounter side shading. This side-shading condition can sometimes be corrected by adjusting the set upon one side of the pad.

Pad rolls are the most important items for successfully applying vat dyes by the pad-steam system. A two-roll pad may have the bottom pad roll of stainless steel and the top roll of rubber. Some dyers prefer both rolls rubber-covered. The three-roll pad may have the top and bottom rolls of rubber and the center roll of stainless steel, or the top and bottom rolls may be of stainless steel and the center roll of rubber. It is not common to find all three rolls rubber-covered. There is considerable disagreement from one finisher to another as to roll combinations. Usually, on a two-roll pad, we find a rubber and a steel roll running together. On a 3-roll pad, some dyers prefer the top and bottom rubber combination, while others prefer a top and bottom roll of steel.

Consider Wear and Maintenance

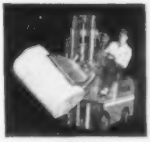
There are quite a number of factors to consider in the roll combination, particularly when a three-bowl pad is being run. A steel roll practically never wears out, whereas the rubber-



BALES

BODIES

BOTTLES


ROLLS

TIRES

In addition to this wool handling device, Clark makes 18 special attachments for lifting, lowering, moving and stacking unusual types of materials, parts and products.

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* * * * *

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We do package dyeing on tubes, skein and warp dyeing, warp mercerizing, and sizing.

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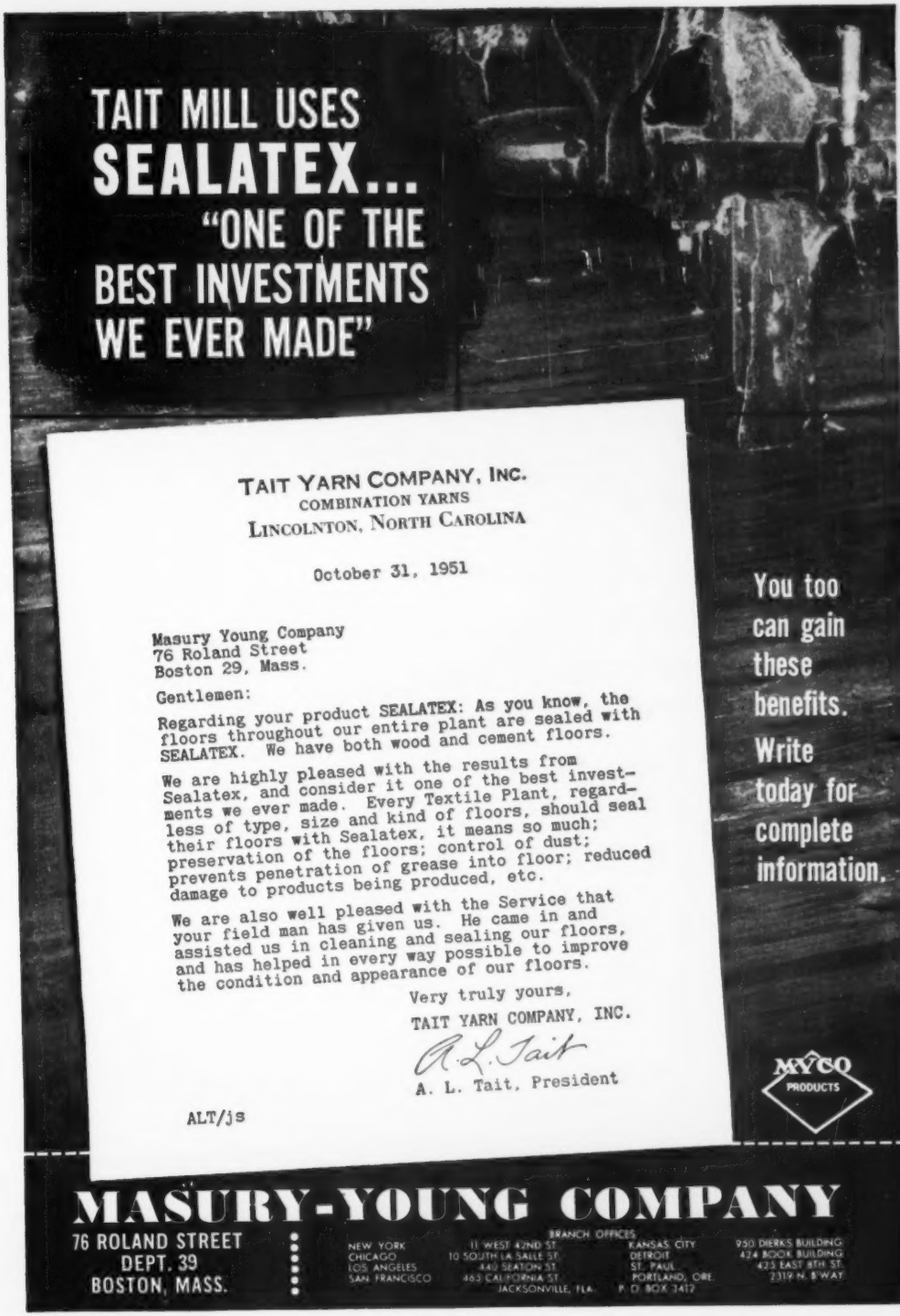
covered roll will wear in a rather short time; therefore, the rubber roll must be removed, ground, and replaced at relatively frequent intervals. When two rubber rolls are run, maintenance cost may be rather high. If frequent changes are necessary, the following points should be considered: stop-down time while rolls are being removed from pad, cost of grinding the rolls, and the number of rolls that must be kept on hand to be used as spares.

A two-roll pad does not present quite as much of a problem since only the one top roll must be changed at any one time. Thus, stop-down time is reduced and the number of spare rubber rolls need not be as many as required by a three-bowl pad with two rubber rolls. The operator of the three-bowl pad very often will run the rubber roll in the middle position, purely for economy. While some of our modern pads are most efficient pieces of precision equipment, roll changing is still a time-consuming and expensive part of maintenance. Roll changing can become quite an item of expense in plants that dye a wide variety of goods of different widths and thicknesses. Short runs of widely different weights, widths, and cloth constructions make for more frequent roll changes. A good dyer watches his rubber rolls very carefully and constantly checks on their condition.

There is some difference of opinion regarding the type of rubber for covering these rolls. Some dyers prefer a rather soft roll, somewhere in the neighborhood of 20 to 30 Adams densimeter reading. They claim such a roll gives a smooth, level appearance to the goods. Other dyers prefer rolls in the neighborhood of 12 to 18 Adams and are able to obtain satisfactory results from this density. On a two-roll pad the softer roll can well have some advantages, but when a three-bowl pad is used, the harder roll will give longer life and service without cutting-out or hollowing. Some dyers also claim that when two rubber rolls are run together, there is less wear on the softer roll. However, in pads where two such rolls are running together, the bottom roll is usually covered with rubber of a hardness of 1 to 8 Adams. While this is not the zero density that a stainless steel roll posseses, it is still quite hard, and the advantage of running a soft-rubber roll against a hard-rubber roll is open to discussion.

Roll Diameter—Important

Years ago many dye pads had rolls of small diameter; 10-, 12-, and 14-in. rolls were not uncommon. Modern pads have rolls of 18- to 20- or 22-in.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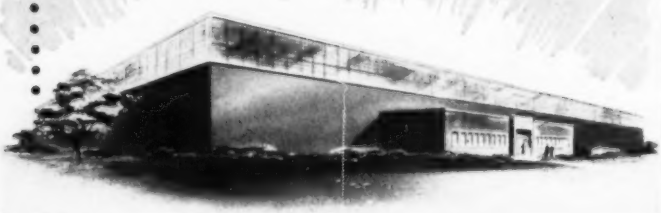
OCTOBER 31 — NOVEMBER 1



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There'll be a playground and movies for the kids and refreshments for all.

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WAREHOUSE DIVISION

Atlantic Steel Company

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dia. and give much more satisfactory results in dyeing than do the smaller rolls. This improvement is probably brought about because of today's higher speeds and the whipping action imparted by the higher rpm. of the small rolls as compared to larger ones. Agitation creates undesirable foam and may even break out the dye suspension so that color specks and spots result.

Now, as to the matter of pad boxes for holding the vat color dispersion. Generally, such a pad box should be closely fitted around the bottom pad roll so that much of the pad roll is immersed in the dye liquor. Such construction prevents undesirable surface agitation.

Also, the cloth is in direct contact with the dye liquor that is being carried up into the nip for a maximum length of time. This type construction also means that there is less dye in the box at any one time so that the box content is changed frequently. Also, at the end of a run there is less dye to be dumped or thrown away. Of course the box should be a jacketed type so that the dye bath may be maintained at a constant temperature. Level controls should be placed on the box so that it can be filled to its maximum capacity and kept at a uniform level.

What we have just said regarding the dye pad is also true for the chemical pad where the cloth is saturated with the caustic soda and hydrosulfite prior to entering the steamer. Here again, a two-roll pad may be used and is often adequate, especially on lightweight fabrics of good absorbency. On heavy goods, in our opinion, a two-bowl pad is preferable, since it permits more adequate and even saturation of the fabric with the reducing chemicals.

Run Sulfurs If You Want To

While we are primarily discussing vat-color dyeing, reduced sulfur colors can also be applied on the pad-steam range. When sulfurs are dyed, the chemical pad may become the dye pad, and versatility is added to the range to have a three-bowl pad for application of heavy sulfur shades.

It is customary to pigment-pad the goods and then dry the pigment before the cloth enters the chemical pad. While dry cans can be used at this point, the most satisfactory results are obtained by passing the goods through a roller dryer. With this type dryer, there is less tendency for the wet pigment to mark off and migrate than when cans are used.

In a roller dryer, the cloth is dried by hot air heated by steam, gas, or oil. Gas-fired and oil-fired dryers are coming into general use, supplanting the

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WET-and-DRY PICKER

Opens and picks dry rayon staple fibre as easily and efficiently as it handles wet cotton fibre after bleaching and extracting, prior to drying. Delivers soft, lofty, thoroughly mixed clean fibres; Sargent-designed for maximum, continuous, trouble-free production. Extremely rugged construction insures even, fast picking and beating operations without vibration. Feed apron may be equipped to handle maximum-height feed loads.

Built in widths 18 to 72 inches.

Production 600 to 1,000 pounds per hour.

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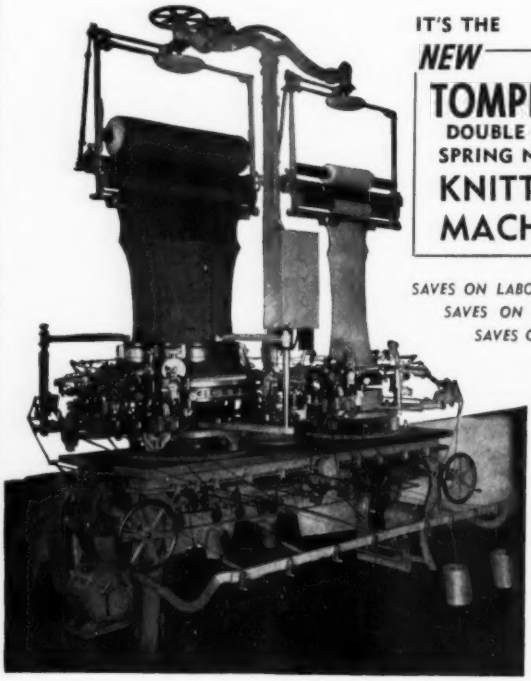
that will give you your choice of
• LOWER COST PER YARD
with less operators
OR . . .
• DOUBLED PRODUCTION
with perfect cloth all the way
plus maximum fabric versatility!



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Let us show you what this machine will do for you—send for NEW DATA SHEET showing actual machine comparisons . . . gives you the kind of cost, production and cloth quality information you've been looking for! Subjects covered include Fabric Flexibility; Perfect Rolls of Cloth; Needle Breakage Reduced One-Half; and Needle Savings! Write, phone or wire . . .

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older-type, steam-heated dryers. With present-day demands for higher speeds and greater production on the dye range, the gas- and oil-fired dryers are able to reach much higher temperatures than are obtainable with steam. A dryer operating steadily on heavy goods at high speeds uses a considerable quantity of steam, and many finishing plants do not have the boiler capacity to maintain the uniform temperatures and provide the large volume of steam required for successful operation of the dryer.

The heated air in the dryer must be circulated evenly and uniformly. Otherwise, back- and face-shading and blotchy dyeings can result due to migration of the pigment dye.

On the delivery end of the pad-steam range, one usually finds a series of high-pressure, stainless-steel dry cans. Dry cans are generally preferred at this point of operation over the hot-air-type dryer, due to their greater drying efficiency. At this point, too, the color is fixed on the goods, so none of the difficulties that can arise in the pre-dryer will occur in this final drying operation.

Use A Good Steamer

The steamer used for the reduction and fixation of vat dye is probably the second most important unit in the pad-steam range. Here the pigment-padded cloth, after saturation with caustic soda and sodium hydrosulfite, undergoes a flash reduction. This reduction takes place in only a matter of seconds. This means the temperature, time, and steam conditions in the steamer must be carefully adjusted and reproducible, day in and day out. However, once optimum conditions are attained, it should not be too difficult to duplicate them from one run to another.

Steamers are usually operated at anywhere from 214 to 224° F. The unit should be under slight positive pressure so that all air is excluded. Steam distribution throughout the chamber should be uniform; otherwise varying temperatures and moisture conditions may exist in different areas. The cloth usually remains in the steamer anywhere from 10 to 25 sec. The time element, provided there is an ample flow of steam and the temperature is maintained properly, does not seem to be too important, even for heavy shades and on heavy goods, though most operators prefer to keep the goods in the steamer over 10 sec.

Protect Goods From Condensate

One of the mechanical problems that exists with the steamer is the danger of condensate splash and water

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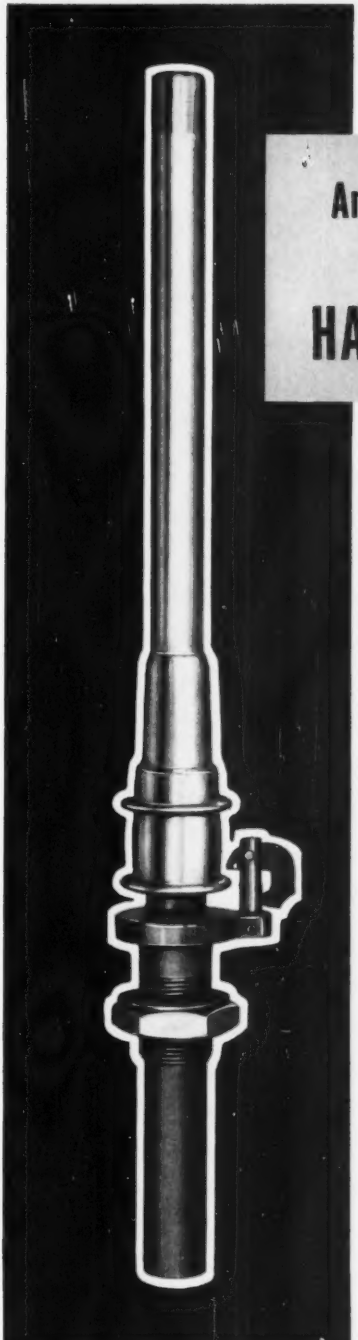

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HARTFORD ROLLER BEARING SPINDLE

For mills preferring the roller-bearing type of anti-friction spindle, HARTFORD offers a spindle with important advantages.

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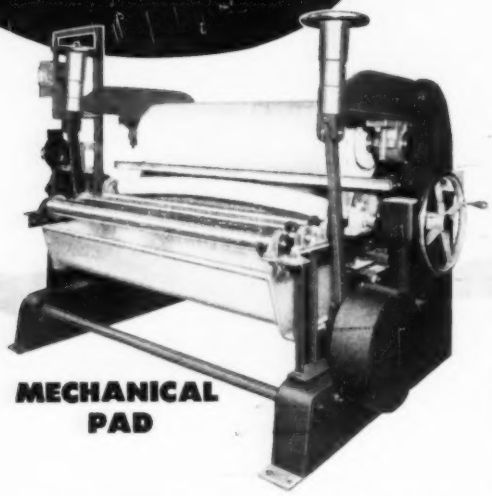

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drip on the goods at the entering end. Steamers are usually constructed so the goods enter at the top through a narrow slit or throat covered by a steam-heated chest. Even though the steam-heated chest is designed to prevent condensing of steam forced out of the throat by the pressure within the steamer, there is still danger of water drip.

Various operators have tried additional heating surfaces to prevent formation of this condensate. Probably the most effective way to stop drip is to install a small suction at the entering throat of the steamer to draw away the steam as it exhausts. Splash guards or gutters can be placed over the windows and other points within the steamer that may cause splash from condensate.

An effective way to prevent water drip on the goods going in and leaving the steamer is to have the goods enter through a throat at the bottom, rather than at the top. The condensing steam from within the steamer dissipates into the air, since there is no surface above the cloth on which steam can condense.

Most steamers are equipped with a pair of nip rolls and a water seal on the delivery end. The cloth leaves the steamer through this water seal, which provides an effective wash and also tends to cool the cloth down, provided cold water is run in the seal.

We mentioned the necessity for even temperature and steam conditions. A uniform source of steam is very important. Preferably a steamer should be located on a direct line from the boiler plant and steam pressure reduced at the point of use. If the plant steam pressure fluctuates greatly, the dyer can be assured of shade variation and incomplete reduction of dye.

Provide Adequate Washers

After the goods leave the steamer, it is necessary that they be washed, oxidized, washed, soaped, and given a final rinse. Wash boxes may be of almost any type. The main thing is to have enough wash boxes and nips to carry out efficiently the operations listed. For example, sodium bichromate and acetic acid are commonly used for oxidation. Many dyers complain over their inability to thoroughly remove the chrome from the goods, due to inadequate washing time. The residual chrome can give rise to many troubles in finishing, and it is most desirable that it be removed.

Some vat dyes undergo a shade change in the soaping bath. If the dyer cannot soap the shade properly, a further shade change may take place on finishing; or poor fastness may ap-

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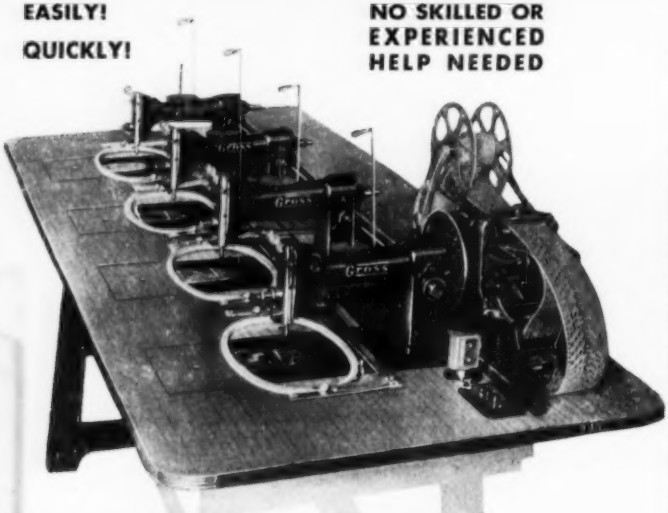

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parently result after the goods get into the customer's hands. It is important that the wash boxes should be large enough and of sufficient number to properly carry out the operations just described.

Cont.-Bleaching Range

(*Continued from page* 103)

compartment, and rinsed in the third. Then they are squeezed and plaited into white bins.

How the Controls Work

The need for control and synchronization in the finishing range is obvious. The range consists of a scutcher, water angle, 10 dry cans, a compensating roll, a Tommy Dodd backfiller, a starch pad, another compensating roll, a set of 30 dry cans, a double set of compensating rolls, and enclosed tenter frame, a batcher roll, and a calender.

A dry-meter "feels" the cloth as it leaves the tenter frame for the batcher. If the cloth contains too much moisture, the frame slows down to allow more drying and then picks up speed again until the cloth remains within defined limits of moisture control.

This speed variation caused trouble in the beginning, when Startex had a scray at the head of the tenter. It was practically impossible to feed cloth into the tenter from the scray with any degree of speed and accuracy. The present continuous-tension device now eliminates the scray and adjusts speed back down the line whenever the dry-meter calls for a change.

A microswitch is actuated by the double compensating rolls between the 30-can dryer and the tenter. When a change in tenter speed is indicated by the dry meter, the compensating rolls take up slack or are pulled up. As a change of speed is demanded, a small reversible motor changes the pulley ratio in the No. 6 Reeves drive. This change, shown in the diagram, changes speeds down the line in proportion. Once set up properly, the system seldom needs adjustment.

Another small Reeves drive, shown in the picture, adjusts the batcher speed automatically as the roll grows larger. This almost insignificant change results in a better width control and more uniform batch rolls.

The Tommy Dodd backfiller is never used in tandem with the starch pad—usually only when goods are backfilled for chintz effects, at which time the calender is also used to form the glaze.

The range will handle 18- to 64-in.

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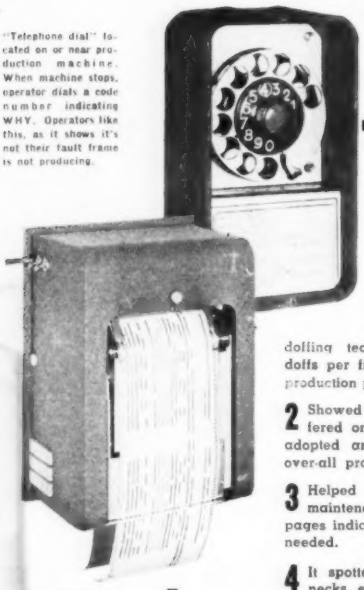
This Mill Discovered WHY Its Frames Stopped... and increased production 17½%

"Telephone dial" located on or near production machine. When machine stops, operator dials a code number indicating WHY. Operators like this, as it shows it's not their fault frame is not producing.



The Centralograph showing continuous time record-chart in office. Records operation of one or more machines simultaneously. Each time a machine stops, "WHY" number dialed by operator appears on chart at that point.

What the Centralograph did in 6 months to help THOR MILLS LTD. INCREASE PRODUCTION

1 Showed second shift was doffing spinning frames about 5 min. faster than first. First-shift doffing techniques corrected. Result—at 6 doffs per frame per shift, on extra half-hour production per frame each day.

2 Showed creeling procedure for roving differed on all 3 shifts. Most rapid method adopted and additional 17½% increase in over-all production time gained.

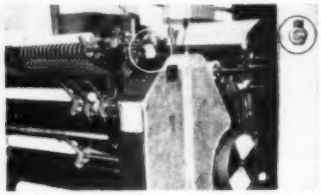
3 Helped fixers concentrate on protective maintenance. Recurring reasons for stoppages indicated where maintenance was most needed.

4 It spotted long-term yarn-spinning bottlenecks, enabling mill to plan ahead on machinery, maintenance and personnel with assurance, based on facts.

5 Eliminated all production paperwork for supervisory personnel, giving them more time on the floor.

6 Provided permanent "morning-after" night-shift reports in more detail than any night-shift superintendent could give orally or in writing.

THE CENTRALOGRAPH TELLS *WHY* MACHINES STOP



Wool Carding Set with rotary contact and "telephone dial."

Read the whole story of this Centralograph installation, in Textile World, June, 1952. It shows how and why the Centralograph more than paid for itself at Thor Mills on one Bradford reducer and two worsted spinning frames. Then contact us and let us show you how the Centralograph can be used to advantage in your mill. Literature on request.

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goods, largely because of a flexible automatic control on the entering end of the tenter. The range can be started only at the batcher, but operators at other points can stop the range.

The versatility of the bleaching end is maintained by three automatic control panels. No automatic proportioning pumps are used at Startex because of the frequent changes in weight per yard of goods.

Steam Accumulator

(*Continued from page 131*)

staggered shifts and lunch hours had caused serious labor difficulties.

The condition was worst at the beginning of each shift and after lunch periods when a large number of units were started up simultaneously. At these times, the peak often approached 72,000 lb. per hr. for a 10-sec. period. The average for all the machines over a complete cycle was only 7,200 lb. per hr. The best operating pressure for the machines was found to be 40 psi.-ga., with good results obtained between 35 and 45 psi.-ga. The accumulator was selected to operate within this 10-psi. differential.

The higher pressure differential between boiler and process pressures could not be used because a reducing valve could not operate fast enough to meet the rapid variations in steam flow. It was necessary to use a flow-control valve to act as a pressure reducer in addition to maintaining a steady flow of 7,200 lb. of steam per hr. The pressure on the downstream side of this valve varies between the design limits of 35 to 45 psi.-ga., and the accumulator floats on the line.

Since the time cycle of the preboarding machines is short, the total steam to be furnished from the system during the peaks was 240 lb. Only 30 lb. of the steam could be supplied from the boiler through the flow control, and the remaining 210 lb. was given up by the accumulator. The enthalpy of saturated water at 45 psi.-ga. is 262.1 Btu., and at 35 psi.-ga. the enthalpy is 250.1 Btu. and yields 12.0 Btu. for the evaporation of water into steam. With the heat of evaporation of 923.9 Btu. at 35 psi.-ga., the accumulator was designed to hold $(240 - 30) \times 923.9 \div (12.0) = 16{,}150$ lb. of water with a volume of 280 cu. ft.

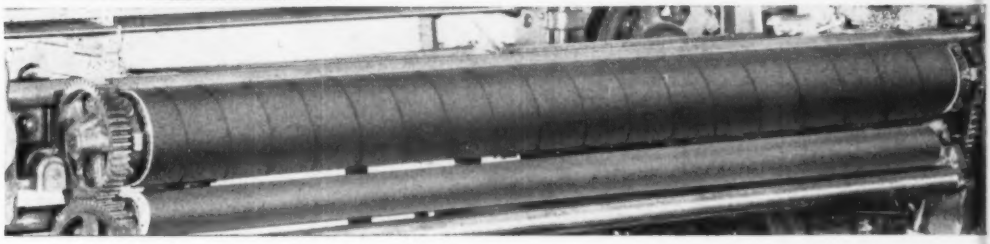
A tank larger than necessary was selected so that in the fully charged condition it would be 50% full in order to provide the largest possible surface area for flashing the high initial rate of 72,000 lb. per hr. without carryover.

The accumulator was installed in a bypass around the existing pressure-reducing valve. With this arrangement, the mill operated while the accumulator was installed; and when the accumulator was first thrown on the line, its operation could be closely observed and controlled.

The steam consumption at this mill now swings through wide fluctuations, but load on the boiler is constant. The pres-

YOU GET AMAZING TAKE-UP TENSION

with this smooth roll covering



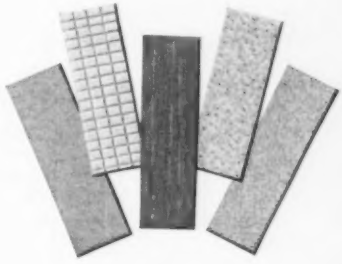
● Here's a roll covering that's so smooth it won't mark even the most delicate high-count materials. Yet it gives you up to twice the holding power you'd expect from a rubber covering.

This new material—Armstrong's NO-732—is made of a synthetic rubber compound, backed with a sturdy fabric. It combines maximum smoothness with amazing friction. Test a sample of NO-732 yourself. Rub it on your clothes, your desk, or the cloth you weave. Notice its strong grip. Feel its smooth surface.

Armstrong's NO-732 comes in widths up to 4 inches, rolls up to 150 feet long. Your Armstrong representative or regular source of mill supplies will be glad to give you samples and complete information. Armstrong Cork Company, Textile Products Dept., 5010 Arch Street, Lancaster, Penna.

ARMSTRONG OFFERS A FULL LINE OF TAKE-UP ROLL COVERINGS

Whatever your preference, Armstrong can supply a wide choice of take-up roll coverings of synthetic rubber, cork and synthetic, plain or gridded cork.



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Because Conventional spindles with Regnery Adapters balance out any other paper tube spinning in the mill.

Because A standard spinning bobbin can be used throughout the mill when filling spindles are converted with Regnery Adapters for use on a rewind operation.

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1. More yarn per bobbin.
2. A smoother spinning unit.
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4. Less waste in spooling operations.
5. A more uniform traverse.
6. A trouble-free, permanently "locked in" spindle and adapter.
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8. Lower bolster replacement costs.

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sure in the steam header at the machines varies within the design limits of 35 to 45 psi.-ga. Thus, this accumulator installation has reduced costs by lowering the cost of boiler operation, by increasing production, and by lowering the reject rate. The former labor problem was completely eliminated.

Use an Accumulator for Emergency Operation

Another accumulator application uses the apparatus in its simplest possible form for a unique purpose. The installation is of such importance that it will pay for itself the first time it is used. If circumstances never warrant its use, the accumulator will have served as excellent insurance.

The plant produces a synthetic fiber and requires a guaranteed supply of steam for emergency operation. If the boiler should fail, serious damage would result to the main process equipment.

No controls are necessary on the accumulator. During normal service the unit merely floats on the line. If the boiler should fail, the check valve would close and the accumulator would supply the system until a stand-by boiler could be put into operation.

Hot-Oil Dyeing

(*Continued from page 105*)

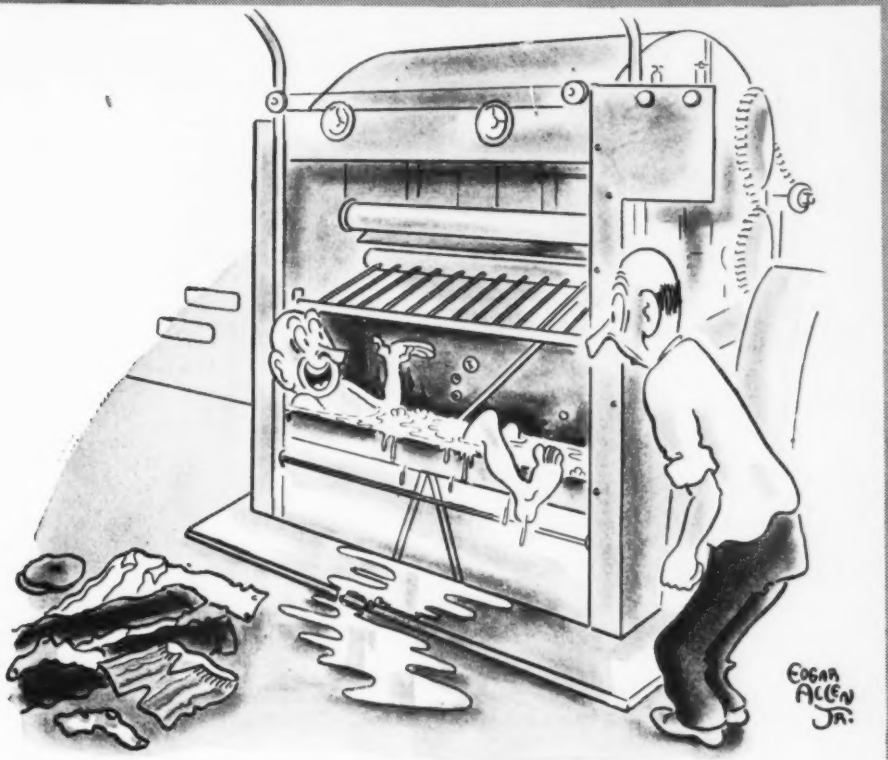
Then feed as needed:
25 lb. chrome
45 lb. acetic acid 56%
1.5 lb. Igepal CA Ex.
All dissolved in 150 gal. of water.
Third box—hot wash (170 to 180° F.)
Fourth box—boil
Start with:
3 lb. Igepal CA Ex.
4 lb. soda ash
Then feed as needed:
3 lb. Igepal CA Ex.
8 lb. soda ash
Both dissolved in 150 gal. of water.
Fifth box—hot wash
Sixth box—hot wash

This Method Saves 25% in Dyes

A sulfur green was applied on a heavy twill by a two-roll pad with one immersion before the nip. This run was 7,000 yd. at 60 yd. per min. with the dye maintained at the boil.

Per Gal.
2.375 oz. Calcogene Brilliant Green 8G Ex. Conc.
0.860 oz. Katigen Deep Black NND Ex. Conc. New CF
0.237 oz. Katigen Tan K
0.160 oz. Katigen Brilliant Blue GGS High Conc. CF
3.632 oz. Sulfide of Soda
1.816 oz. Soda Ash

The dyestuff was applied at a boil on the two-roll pad, then entered



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Leave it to a textile man—he really believes in Swift's Soaps. At least, that's our impression when we talk to all the successful operators who consider Swift's Soaps tops for dyeing, fulling, scouring and other specialized service.

You, too, will find that Swift has the *right* soap for *every* textile need. And more, Swift's Soaps combine proper uniformity of composition with excellent physical form.

If you're faced with a unique, especially tough soap requirement, call on us. Our years of soap-making experience can help you find a soap that fits your particular operation.

Call SWIFT first for soaps

Listed below are some of Swift's fine soaps. You can order any one of them from Swift's distribution points coast to coast and expect immediate delivery.

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557 Flakes
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ARE MADE FROM

"LINDE" SYNTHETIC SAPPHIRE
Trade-Mark

By using sapphire at critical points in your equipment, you can cut yarn reject losses and maintenance costs to a surprising low. Sapphire has three properties that make these savings possible: (1) It takes and holds a high polish; (2) It's homogeneous (non-porous)—can't fray yarns; (3) It resists wear and corrosion remarkably well.

More and more technicians are changing over to sapphire textile guides to protect the quality of their yarns. More and more producers find that their yarns "drag" less over sapphire guides than over any other guides they have ever used. A large rayon spinner reports *twelve years* of trouble-free service from sapphire guides in locations where other guides failed in a *few months*. It all adds up to higher output, better quality, and lower cost per pound of yarn.

"Linde" synthetic sapphire materially increases the life of your guides. Let us show you how. We'll be glad also to help you with the design and testing of standard or special sapphire guides for your plant.

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A Division of Union Carbide and Carbon Corporation

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immediately into the first Williams unit, which contained 40 gal. Primol D (White mineral oil). A temperature of 250° F. was maintained to keep the oil level constant.

The second Williams unit contained 5 lb. Igepal CA Extra Conc. cold, and to this cold rinse bath was fed 10 lb. Igepal CA Extra High Conc. per 100 gal.

This feed was regulated to a point where a slight foam was kept on top of the bath to prevent any accumulation of oil in this unit.

The third Williams unit contained cold wash water.

The fourth and fifth Williams units each contained:

4 lb. sodium bichromate
2 gal. acetic acid 84%
2 lb. Igepal CA Extra High Conc.
Temperature, 180° F.

The feed for the chrome baths was made up to contain (per 200 gal.):

24 lb. sodium bichromate
4 lb. Igepal CA Extra High Conc.
10 gal. acid 84%

The sixth, seventh, and eighth Williams units were used for hot washes. This sulfur shade had previously been run on this range by the conventional method.

The dyed appearance of this sulfur twill surpassed regular production. The shading was excellent from start to finish. This shade had always given the mill considerable trouble. The varying degrees of exhaust of the colors used in the formula made the colors difficult to control when goods were dyed from a water bath.

Loom Settings

(*Continued from page 127*)

stationary, it is often necessary to tilt the brackets.

After the stop-motion brackets or feeler-bar ends are moved, the oscillator rod must be readjusted.

4. The arch ends are set to position the harnesses in a straight line from the harness sheaves to the treadles with the front harness just clear of the reed cap when the lay is at back center.

This setting can also be changed by adding or removing idle harness sheaves between the active sheaves and the bracket on Brown or Dwight spring-top harness motions. On roll-and-shaft harness motions, the bearings can be adjusted.

5. The top of the take-up roll must be level with the top of the whiproll to make the top warp shed slack.

Other settings and adjustments that affect cloth appearance are the tension of the warp, the throw of the

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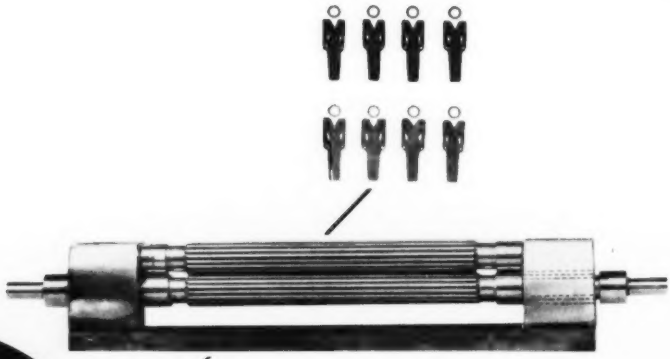

Ideal Drawing Rolls* Cut Labor Costs 57%

One representative Southern mill cut its labor costs 57% when they installed Ideal High Speed Drawing Rolls. The same mill reduced sliver variation from 33% to 15% and roving variation from 42% to 36%. Floor space required for drawing frames was reduced from 12,500 sq. ft. to 5,800 sq. ft.

These impressive figures are matched by reports from other mills . . . and exceeded in many cases. Increased production, improved quality, reduced operating and maintenance labor costs, and lower power consumption are universal. The benefits you get from Ideal Drawing Rolls are so great that it will pay you handsomely to get the full story on Ideal High Speed Drawing Rolls before you replace a single set of wornout rolls on your drawing frames. Write or call for the facts.

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Bessemer City, N. C.

*patented

harness-motion cams, and the setting of the harnesses.

If all settings and adjustments that affect cloth cover are made before looms are put in production, the cloth appearance will be improved.

Fabric Engineering

(*Continued from page 115*)

Considerable care has been taken to point out the limitations in the use of conventional diameters because anyone going into the fine points of engineered fabric design will encounter these limitations.

However, the practical advantages of using conventional diameters must not be underestimated. Such usage is practical because it is simple and provides useful results to a first approximation. Peirce's advice, confirmed by experience, is to use conventional diameters and to add refinements only when these do not work.

One principal reason that conventional diameters are adequate is probably that most practical design is relative. The usual kind of problem is that of changing the weight of a fabric, changing yarn sizes, or reproducing a successful type of fabric with a different kind of fiber. In such cases there is no substantial change in warp and filling twist multipliers or in the number of plies or other variables that affect diameter.

In consequence, the relative yarn diameters are the same when conventional diameters are used as they would be if real diameters were used.

New Tool Is Available

Peirce's rule for cotton-yarn diameters is that the bulk density of all cotton yarns (not cotton fibers) is 0.909 grams per cubic centimeter. This assumption leads to a conventional diameter factor of 0.0358 and to the numerical figures connected with cover factors that appear in Peirce. For cylindrical yarns, the diameter is given by Peirce in simplified form as conventional cotton-yarn diameter in inches =

$$\frac{0.0358}{\sqrt{\text{cotton yarn number}}} \text{ or } \frac{k_d}{\sqrt{N}}$$

To extend the use of conventional yarn diameters to kinds of fibers other than cotton, the assumption is made that yarns spun of other fibers are just as compact as cotton yarns having a bulk density of 0.909—that is, the fibers pack together equally tight. On this assumption, the conventional diameter of a yarn is larger as the fiber density becomes lower.

Fiber density enters into the equa-

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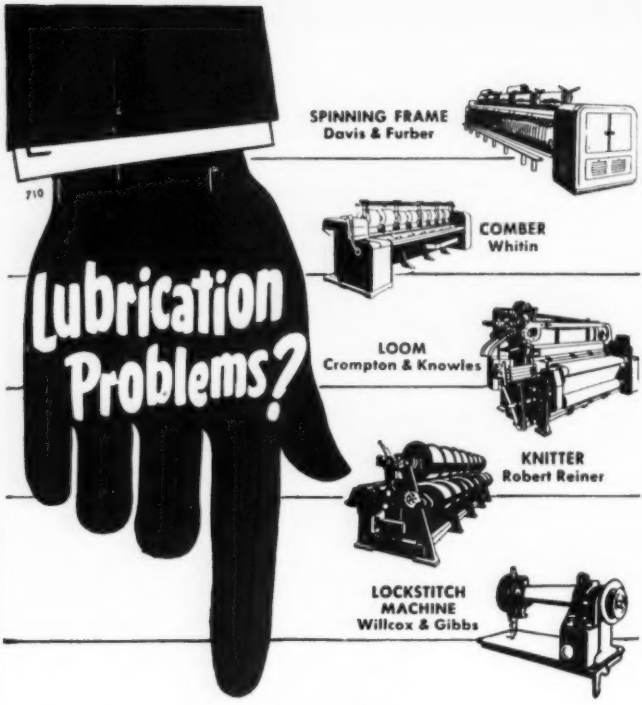

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tion as the square root of the fiber density; that is, the yarn diameter is inversely proportional to the square root of the fiber density. The formula then becomes

$$\text{Yarn diameter } (d) = \frac{\text{constant}}{\sqrt{\text{fiber density}}\ \sqrt{\text{cotton yarn number}}}$$

or

$$\frac{k_d}{\sqrt{D}\ \sqrt{N}}$$

If other yarns are equally compact as conventional cotton yarns, the diameter factor for any yarn spun of a fiber with a fiber density D in grams per cubic centimeter and cotton yarn number N is the diameter factor for cotton multiplied by the square root of the fiber density of cotton. Since the fiber density of cotton is 1.50 and the square root is 1.225, it follows that the

All-fiber diameter factor (k_d) = 1.225 x 0.0358, or 0.0438

This development of an all-fiber diameter factor is the basis of the all-fiber system; consequently, a conventional yarn diameter can be computed as a conventional all-fiber diameter by the formula:

$$(d) = \frac{0.0438}{\sqrt{D}\ \sqrt{N}}$$

A yarn spun from a fiber of fiber density 1 to a cotton yarn number of 1 would by the formula have a conventional diameter of 0.0438 in.

Specific Diameter Factors

The diameter factor for any specific kind of fiber is computed by dividing 0.0438 by the square root of the fiber density in grams per cubic centimeter. For example, the diameter factor for cotton yarn in units of cotton yarn number is 0.0438 divided by 1.225, or 0.0358—which, of course, brings us back to where we started.

It will be noted that a given numerical diameter factor applies to a specific fiber (or to the all-fiber system) and to the unit in which yarn size is expressed, which thus far has been assumed to be in cotton count. Proper designation is made by placing the kind of fiber and the unit of yarn size in parentheses and separating them by a colon. For example, the expression

$$\text{(cotton: cotton yarn number) } d = \frac{0.0358}{\sqrt{N}}$$

indicates that the formula applies to cotton yarns and that yarn size is in the cotton system. Or again,

$$\text{(wool: worsted yarn number) } d = \frac{0.0467}{\sqrt{N}}$$

indicates that the formula applies to wool yarns and that yarn size is in the

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Non-oriented WEBS have

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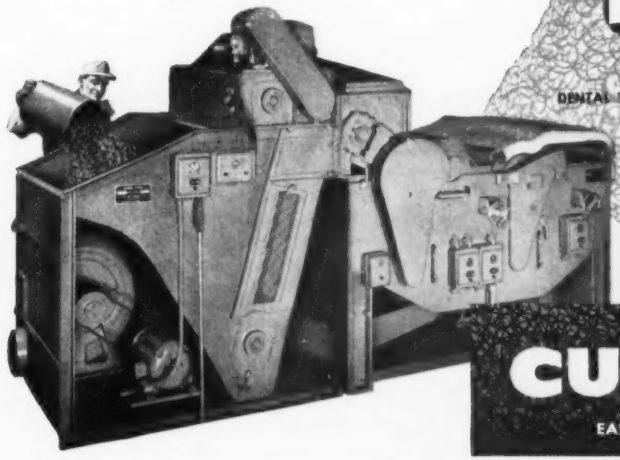

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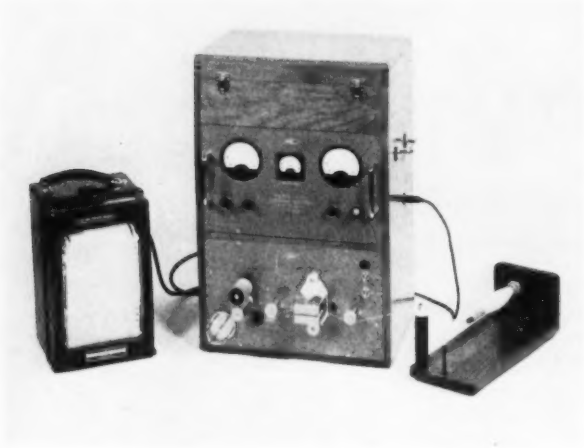

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worsted system. Or, as a third example,

$$\text{(all-fiber : cotton yarn number) } d = \frac{0.0438}{\sqrt{D}\ \sqrt{N}}$$

indicates that the formula is in the all-fiber system and that yarn size is in the cotton system.

Reciprocal and Direct Expressions of Yarn Size

Thus far, yarn size has been illustrated by cotton yarn number, which is a reciprocal system of expressing yarn as length per unit weight. Systems for expressing yarn size directly as linear density (weight per unit length) are in use, the most widely used being that of denier (grams per unit length of 9,000 meters).

The formulas are different in the reciprocal and the direct systems, and it is desirable to use different symbols for them. The symbol N is employed for reciprocal expressions of yarn size and *H* for direct expressions, H indicating the heaviness of the yarn directly in linear density (weight per unit length).

Using the linear-density reciprocal expression, we find that the formulas for diameter take the form

$$\text{All-fiber yarn diameter } (d) = \frac{\text{diameter factor} \times \sqrt{\text{linear density}}}{\sqrt{\text{fiber density}}}$$

or

$$\frac{k_d \times \sqrt{H}}{\sqrt{D}}$$

Yarn-Diameter Tables Make Conversion Easy

As a convenience to textile designers, a table of conventional yarn diameters has been prepared and appears on page 115 labeled as "Yarn Diameters." It includes the two important natural fibers, cotton and wool, and selected synthetic fibers of varying fiber density. The yarn size is in cotton yarn number.

Alongside the column for diameter in inches appears its reciprocal, which is the compact number (n*) of yarns per inch; i.e., the number of yarns side by side and touching that occupy one inch. The asterisk denotes the compact condition. The second column headed as $1/\sqrt{N}$, is the reciprocal of the square root of the yarn number that was employed in computing the table.

The diameter factor for each kind of fiber was set up as a constant multiplier on a computing machine and multiplied successively by $1/\sqrt{N}$. It is quite easy to compute these diameters for any kind of fiber and unit of yarn size. The values for $1/\sqrt{N}$ were copied directly from Barlow's Tables,

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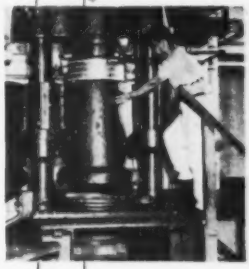

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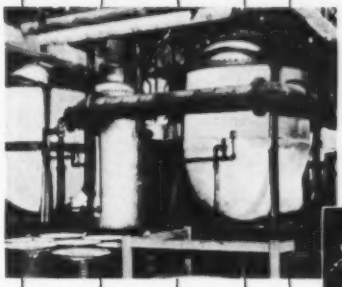

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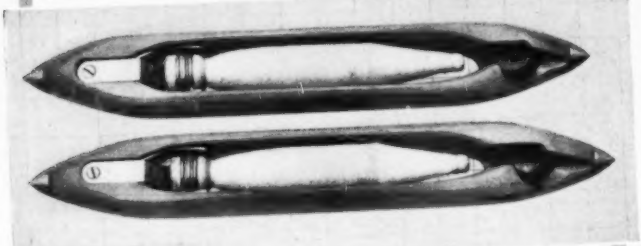

Major shuttle improvements have long come from Watson-Williams. This time the Shuttle People have introduced two leaders in their field **— shuttles for Draper Looms, fitted with Cast Iron Eyes, to accommodate a longer filling package.**

One of them is 15¼" long, the other a standard 15¾" long. Both are equipped with 8" bobbins. The 15¼" length shuttle is designed to use a short eye to give longer bobbin length. A short eye can also be incorporated in shuttles of other lengths for Standard Draper Looms, and for C and K cotton looms to provide a maximum length bobbin.

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as were also the reciprocals of d, the compact number of yarns per inch, n*.

A later section on this subject will show how to compute the diameter factor for any fiber density and unit of yarn size.

Fiber-Density Tables

For the general use of the all-fiber system, fiber densities are required. For convenient reference, Table II gives figures of fiber densities, square roots, reciprocals of square roots, diameter factors with yarn size in the cotton system, and the reciprocal of the diameter factors, which, as will be explained later, is the compact cover factor with yarn size in cotton count.

It may be noted that a variety of values for fiber density appear in the literature on the subject.

Practical Use of Tables

As a practical matter, the numerical values of yarn diameters are unlikely to be used as such. The table will be used in a different way.

Suppose a knit fabric has been made of 20/1 cotton-yarn-number nylon yarn, and experiments are to be made with Dacron knitting yarn. What cotton yarn number for Dacron will give the same diameter as 20/1 nylon? From Table I, we find that the diameter for 20/1 cotton yarn number is 0.00917 in. In the column for Dacron-yarn diameters, the diameter of 17/1 Dacron yarn is 0.00904 and of 16/1 is 0.00932 in. Without going to fractions, we can therefore say that cotton-yarn-number 17/1 Dacron is nearest in diameter to 20/1 nylon.

Comparing the yarns per inch in a known or proposed fabric with the compact number, n*, in the table will provide an idea of the tightness of weave, or, more exactly, of the cover.

For example, it is proposed to weave a fabric of 10/1 cotton-yarn-number viscose with 80 ends per inch. The compact yarns per inch from Table I for cotton of about the same fiber density as viscose is 88.5. The proposed warp is close to the conventional upper limit and hence is a tight warp; therefore consideration might be given to weaveability, since some looms do not weave to the limit, whereas a warp somewhat higher than the conventional upper limit can be woven on, say, heavy duck looms.

If the number of warp yarns for 10/1 viscose were 44, the cover is 50%, which is characteristic of certain types of woven fabrics but not of cheesecloth on the one hand or ducks on the other. However, the tightness of weave is most usefully expressed by cover factors.

A succeeding article will give experi-

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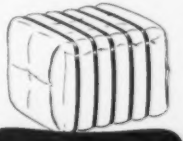

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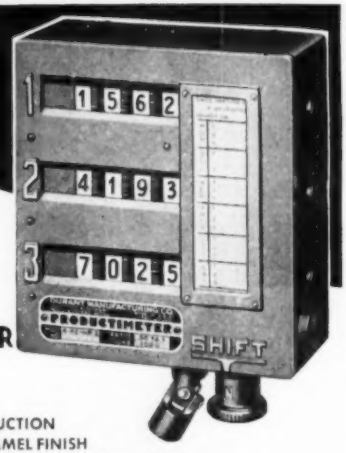

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mental evidence of the validity of the all-fiber system, will discuss the conversion of textile factors for different fibers and units of yarn size, and will give formulas for factors in the all-fiber system.

2-Mill Power Plant

(Continued from page 117)

In the dry season when the raw-water supply is limited, the condenser is cooled with raw water, and then this same water is pumped to the filter beds before it is re-used for the manufacturing processes. It has been estimated that more than 50% of the heat picked up by the circulating water is recovered.

The 200-kw. unit has a generator driven through a reduction gear by a 100-lb., back-pressure-controlled turbine. Steam exhausted from this turbine is used by the manufacturing processes.

A turbine foundation to accommodate another 800-kw. unit is a feature of the new turbine room. In the event of an increase in power requirements, this additional turbine could be installed at minimum cost. The companion 200-kw., back-pressure-controlled turbine would be installed in the old turbine room, which has sufficient space for it.

The power load carried by the back-pressure turbine is dependent on the quantity of 100-lb. steam required by the mills. The remaining power load is carried by the 800-kw. extraction turbine.

Switchgear

Both turbines generate current at 600 v. Current is transmitted from the 800-kw. generator through a copper bus duct to the main switchboard. Air circuit breakers are used for the distribution of power.

As the new switchboard is located within 15 ft. of the switchboard in the original plant, a tie bus with disconnect opening was installed between the two boards. Power can thus be transmitted from the new board to the original board, from which the original feeders into Mill No. 3 are served.

Likewise, power generated by the diesel engines in the original power plant can be transmitted through this tie bus to the new switchboard, and current can be sent out through the new feeder switches. The new switchboard is equipped with a full complement of instruments so that all

NEW IN STARCH TECHNOLOGY

PENFORD GUMS

(STARCH HYDROXYETHYLETHERS)

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PENFORD GUMS are the products of an exclusive patented process which makes it possible to attach hydroxyethyl groups to starch molecules by strong ether linkages. This produces a series of starches which have the desirable characteristics of both synthetic water soluble film forming polymers and corn starch. The introduction of hydroxyethyl groups into the corn starch molecules inhibits any tendency towards reassociation of the starch molecule and resultant gelling or "set back" of the Penford Gum pastes, and at the same time greatly increases the affinity of the polymer chains for water.

PENFORD GUMS produce very stable hydrosols with a cohesive or "long" character, greatly increased clarity, and negligible tendency to gel and retrograde on cooling and ageing. The films formed on drying Penford Gum hydrosols are exceptionally clear, strong, smooth, and flexible. Though non-tacky, even at high humidities, they readily redissolve in water.

PENFORD GUMS are produced in a wide range of viscosities, with the more viscous being equivalent in hot paste viscosity to regular unmodified corn starch, while the thinnest is similar in hot paste viscosity to the higher modified conventional thin boiling starches.

PENFORD GUMS gelatinize at lower temperatures than regular corn starch and the granules are rapidly dispersed on cooking to form very homogeneous, viscosity-stable hydrosols.

PENFORD GUMS retain their cohesive and non-gelling character when cooked in either acid or alkaline conditions.

PENFORD GUMS are used throughout the textile industry for better weaving, finishing and printing.

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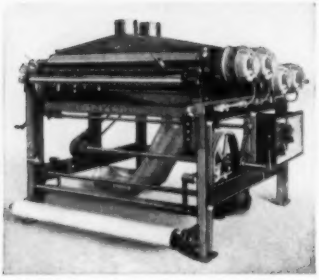

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with Automatic Seam Protector*

- Completely removes selvage and surface threads from cottons, rayons and silks.
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- Complete full width protection on all seams.

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Ever stop to consider what you have come to expect, and actually do get, from a ring traveler?

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operating conditions may be observed and controlled.

Transformers

Two transformer stations minimize the transmission-line copper. A station at Mill No. 3 steps up the voltage from 600 to 2,400 v., and a station at Mill No. 1 changes the voltage back to 600 v. The power-transmission cable between the two mills is mounted on steel poles that also support the steam- and condensate-pipe transmission lines. After the machinery relocation reduces the power and light load, the transmission line will have sufficient carrying capacity and the transformers will be removed.

Emergency and Week-End Supply

A 60-kw. diesel generator supplies week-end and emergency light and power loads. Therefore no outside power is purchased when the steam-generating units are not in operation.

Exploring the Community

(*Continued from page 151*)

gram to insure that all statements were factually correct and that the program had met the mill's institutional standards.

When a backlog of three completed programs was ready, the idea was introduced to the public by advance promotion in local newspapers that included both paid advertising and spot news stories highlighting the coming event. Announcements on the several hundred plant bulletin boards and in the mill's *Supervisory News Letter* (a circular sent to the company's 750 supervisors and department heads) informed employees of the new series of radio programs. With considerable fanfare and enthusiasm, the first of the programs was presented to Danville. Its success exceeded expectations, and the initial program obtained a high listener-ship rating that is still maintained.

The Pitch Changes

For the first 13-week series, 15-minute broadcasts told the story of the mill and its various employee-community relations activities, such as its recreation programs, its research programs, its training-school opportunities, its retirement plan, and its health and hospital plans. At the end of the first series of mill-community educational programs, the pitch of the broadcasts was changed.

Now, in a weekly 30-minute broadcast featuring big name orchestras and popular tunes presented with semi-classical treatment, a local citizen who

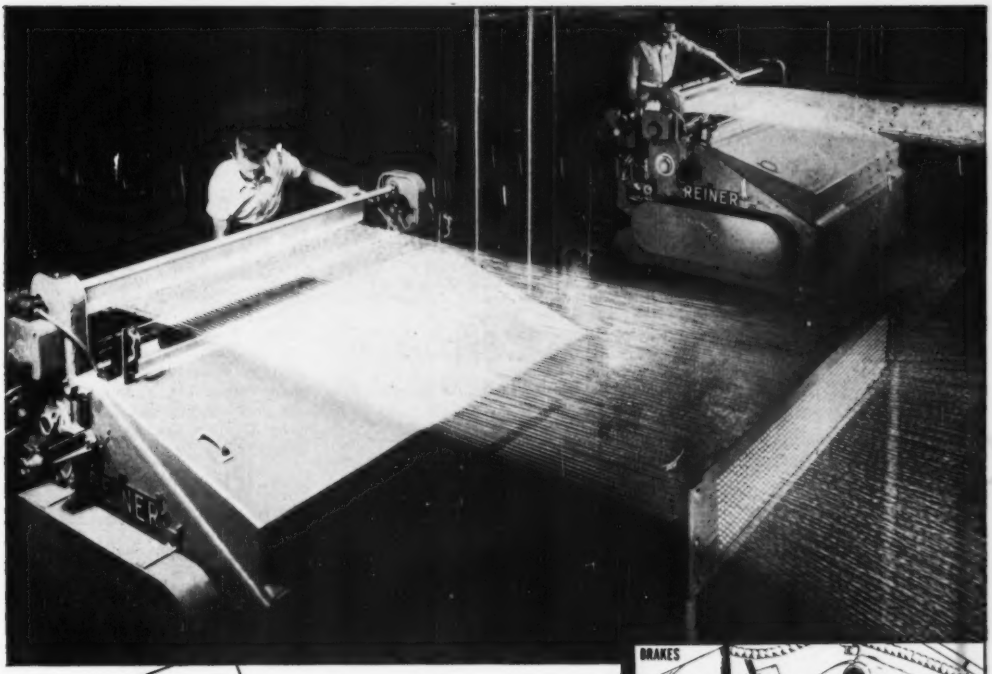
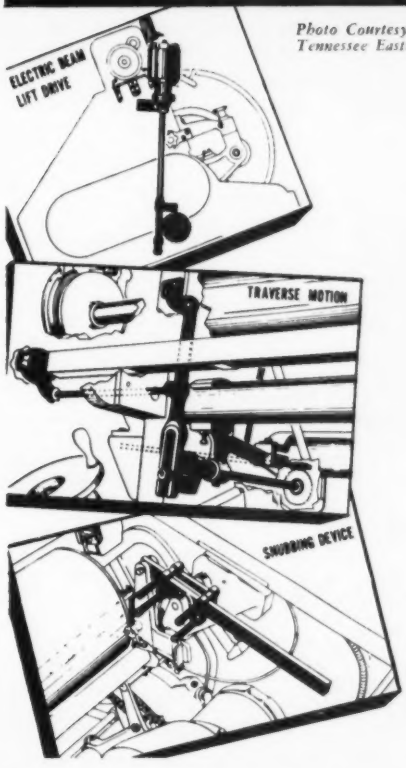
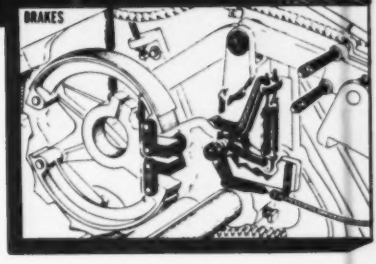


Photo Courtesy of Tennessee Eastman Corp.





AN EFFICIENT BEAMING MACHINE

All Purpose—Full Width

designed to warp a fine delicate yarn at high speed without any undue strain on the yarn. It is built for beaming filament rayon, nylon, spun rayon, cotton, woolen, worsted, linen, acetate, etc. A fully illustrated catalog—yours for the asking—acquaints you with the most important features of this reliable and economic warper.

Reiner warping equipment is performing in more mills today than ever before. More than 20 features stress modern design, ease of handling, speed with safety, higher and more economical production. Write for details.

Reiner also offers Magazine Creels with mechanical and electrical stop motion—Single Type Creels—Truck Creels and Special Duty Creels. Ask for our richly illustrated creel catalog.

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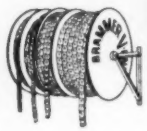

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- **PRE-STRETCHED**—No tensioning devices needed . . . means lower maintenance costs.
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THIN BOILING AND TEXTILE STARCHES

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The Hubinger technical staff and laboratories are widely recognized for their thorough and practical knowledge of the use of starch for textiles. Their experience assures you of the *best* product, *tailor-made* to fit *your specific needs.* Consult us on any production problem—at no obligation, of course.

has attained some outstanding record is saluted, and a brief friendly message is sent from Dan River to the community. Thus the mill recognizes the human-relations element of community life by tying in its own personal message with the story of someone who has earned distinction in Danville. Among those the salutes have recognized are a school teacher who never missed a day in class in the past 27 years, a Boy Scout who showed exceptional fortitude and quick thinking in a serious automobile accident, and a leading young citizen who has largely contributed to the success of many civic projects despite a severe physical infirmity. The mill's personal message may take one of many forms, but is always informative and conveys the idea that Dan River Mills acknowledges its responsibilities to the citizens of Danville and is a friendly neighbor in the community.

The Community Cooperates

The radio stations have become so enthusiastic over the success of the program and its far-reaching and influential message that they give spot courtesy plugs each week. One of them has a display boosting the program in its lobby as well as in a Main Street store window—immediate examples of community cooperation.

Concurrent with the radio broadcasts are quarter-page weekly advertisements in the three local newspapers. There is no other tie-in with the broadcasts except a notice of radio time and stations.

What It Costs

The cost of radio time on the Danville stations is relatively inexpensive and generally in line with costs of radio time in other Southern textile communities. Production costs of the radio programs are nominal since the public relations staff writes the script. The newspaper ads are also prepared by the public relations staff, using an artist and photographer in the company. It is a simple matter for any mill that desires to inaugurate such a program to make a quick check with its local radio station and newspapers and to figure its own time and ad costs.

You'll find that for a reasonable cost, you can launch the same kind of community-relations advertising program that is doing so much for Danville.

Get that SCRAP Back to WORK!

Discover for Yourself the Many Advantages of NYTRON

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NO OTHER WETTING AGENT-DETERGENT MATCHES ITS SUPERIOR PERFORMANCE

NYTRON® wetting agent-detergent gives you better and more rapid soil removal . . . improved suspension of soil . . . faster and more complete rinsing because it contains an exclusive combination of properties not available in any other single synthetic organic detergent.

Exceptional Detergency—whether used in hot or cold, hard or soft water. NYTRON retains its superior detergent action even when used in acid or alkaline mediums.

Excellent Wetting—NYTRON reduces wetting time from hours required in plain water to a matter of seconds.

Excellent Emulsifying Power—NYTRON removes oil and greases from fabrics and surfaces.

Free-Rinsing—Even in cold water, NYTRON rinses quickly and thoroughly and does not leave a scum or other insoluble deposit.

Counteracts Hard Water—NYTRON is more economical because increased quantities do not have to be added to compensate for water hardness.

High Chemical Stability—NYTRON is remarkably stable under widely varying conditions of temperature, acidity or alkalinity.

Highly and Rapidly Soluble—NYTRON has a unique solubility range. It goes into solution almost instantly even in cold water, and it will not "salt out" in concentrated solutions of many acids, alkalies or metallic salts.

Reduces Surface Tension—Only 3½ ounces to 100 gallons of water will reduce surface tension by more than 50%. In hard water, this action is actually enhanced.

Use NYTRON® for...

- Scouring prior to yarn and cloth dyeing
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- And for many other textile operations, including plant and equipment cleaning

Use NYTRON for processing wool, nylon, rayon and cotton where wetting, penetration, detergency and rinsability are important factors. Prove to yourself that its exclusive combination of properties makes it a truly superior wetting agent-detergent for textile operations. Try NYTRON . . and see the difference. For complete information, write to the address below on your business letterhead.

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Sales and service on NYTRON, formerly handled by Solvay Sales Division, are now handled by Nitrogen Division, Allied Chemical & Dye Corporation.

Smoother processing for your synthetics and blends with

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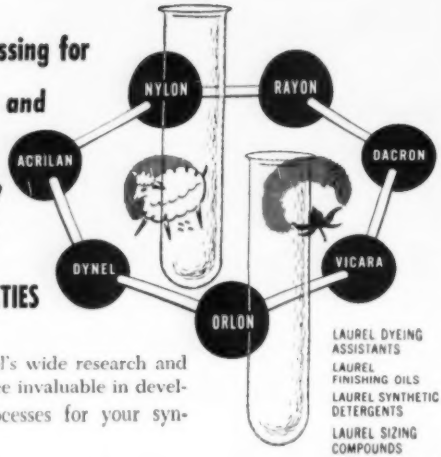

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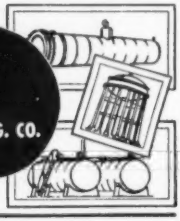


Books of Interest

All About Synthetics In a Single Volume

AMERICAN HANDBOOK OF SYNTHETIC TEXTILES, edited by Herbert R. Mauersberger; Textile Book Publishers, Inc., 303 Fifth Ave., New York 16, N. Y.; cloth, 1216 pages, $10.80.

Six chapters of this latest handbook deal with yarn manufacturing. Special sections relate to different fibers. Weaving and synthetic gray-goods constructions are covered for both filament and spun yarns in two long chapters. Knit-goods terminology and the knitting-machine types are discussed in some detail.

The dyeing of synthetics, dye nomenclature, and printing of synthetic fabrics are discussed with much late information on newer machines and methods. Finishing, resin preparation, resin application, and some of the latest machinery for these processes are also described.

This handbook, in short, with its wide variety of information and its 430 tables, charts, and flow sheets, fills a real need for any mill that handles synthetics in any way.

Canadian Textiles As of Today

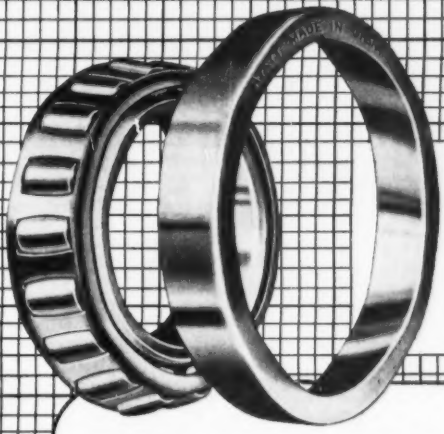
MANUAL OF THE TEXTILE INDUSTRY OF CANADA, 1952 Edition; Canadian Textile Journal Publishing Co. Ltd., 223 Victoria Ave., Westmount, Montreal 6, Que., Canada; paper, 198 pages, $2.10.

The Canadian textile industry of today is given a thorough review in this latest issue of a well-known manual. Production data and statistics of the over-all industry discussed in feature-article form include: cotton yarn and cloth manufacturing, wool cloth and knitting, synthetic yarn and cloth production, and dyeing and finishing. Mill-management problems, personnel problems, quality control, production planning and coordination, the work of the Textile Technical Federation of Canada, capital investment in the industry, and Canadian markets are also reviewed.

A directory of textile mills in Canada and a buyers' classified index also make the directory very handy indeed for those men and mills with Canadian interests.

Engineers' Handbook On Motor Controls

CONTROLLERS FOR ELECTRIC MOTORS, 2nd Edition, By H. D. James



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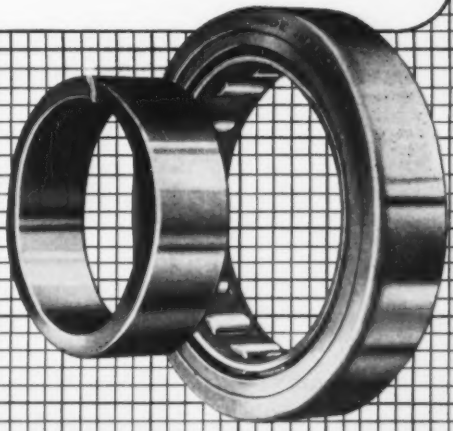
On the strength of their proved performance on the job, more and more Hyatt Roller Bearings are being used in the construction of looms and preparatory and finishing equipment.

Textile machinery builders know that behind this consistently outstanding Hyatt performance are unexcelled engineering and research facilities, modern production equipment and precision craftsmanship. All help to make possible the better machine operation which the application of these better bearings assures.

Many of the machines you now purchase may be had with Hyatt Roller Bearings as regular equipment, or you can obtain the added Hyatt advantages by specification or using them as changeovers. Ask for further details. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.



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HERE'S A NEW FIBREEN FOR TEXTILE PACKAGING

For special packaging problems involving textiles, a new non-asphaltic FIBREEN has been perfected and is now available in standard roll widths. This new protective paper, known as S.R.A. FIBREEN, assures stainless packaging protection. It is unusually pliable even at low temperatures and conforms readily to any product contours. Its fibre reenforcing gives it amazing strength.

S.R.A. FIBREEN includes all the advantages for complete protection which have made regular FIBREEN the preferred packaging paper . . .

- Prevents entry of moisture, dirt or dust.
- Reduces damage claims.
- Easy to handle, costs less for application.
- Economical as a packaging material.

FIBREEN is available in roll-widths of 36", 48", 54", 60", 72", 84", 96".

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and L. E. Markle; McGraw-Hill Book Co., 330 West 42nd St., New York 36, N. Y.; cloth, 418 pages, $7.

A new second edition of "Controllers for Electric Motors" has been published. It retains all the practical and useful information about the design, application, operation, and maintenance of industrial controllers that was in the first edition. In addition, it includes chapters on such recent developments as the magnetic amplifier, the dynamo electric amplifier, magnetic clutches, a. c. and d. c. crane control, and remote and supervisory control.

Engineers whose job it is to select controls for machines and tools, and maintenance men whose job it is to keep machines and tools running will find this book especially helpful. There is much new material, some of it published for the first time—for example, the chapter on the magnetic amplifier. A lot of the text has been completely rewritten and brought up to date by the addition of pertinent data.

There is, in short, enough material on controllers in this book to give the reader a working knowledge of the design, operation, and types of motor controllers that are currently available.

Questions AND Answers

Quilling and Weaving Elastic Yarns Automatically

Technical Editor:

Can quilling be done on Whitin Schweiter automatic winders? Can we weave elastic yarn on W-3 automatic looms? We are definitely interested in using a lastex yarn if we can do so without completely changing our setup. (9569)

The Whitin Schweiter automatic winder will satisfactorily quill elastic yarns. Keep a fairly light tension (15 grams) on the ends. Keep the traverse stroke set uniformly.

The tension must be carefully controlled at the loom. Usually, silk-type shuttles (with Patterson eyes) are used. These shuttles must be changed by hand when the filling is exhausted. The shuttle lining must be carefully placed in the shuttle to avoid uneven yarn tension.

If the bobbin-transfer motion on W-3 looms is used, the silk shuttles cannot be used. Here again, shuttle tension is important. If the tension is

REVERSIBLE FOR

LONG WEAR

Super-Stroke
Fibre Reinforced
SWEEP STICKS

The exclusive 3-point fibre-flex suspension design of Super-Stroke Sweep Sticks gives outstanding wear . . . and the unique reversible feature doubles its life again! Made of finest, ski-quality hickory with pressure bonded fibre sides and inserts that are locked to the wood forever. For top performance, insist on Super-Stroke Sweep Sticks. Order today from

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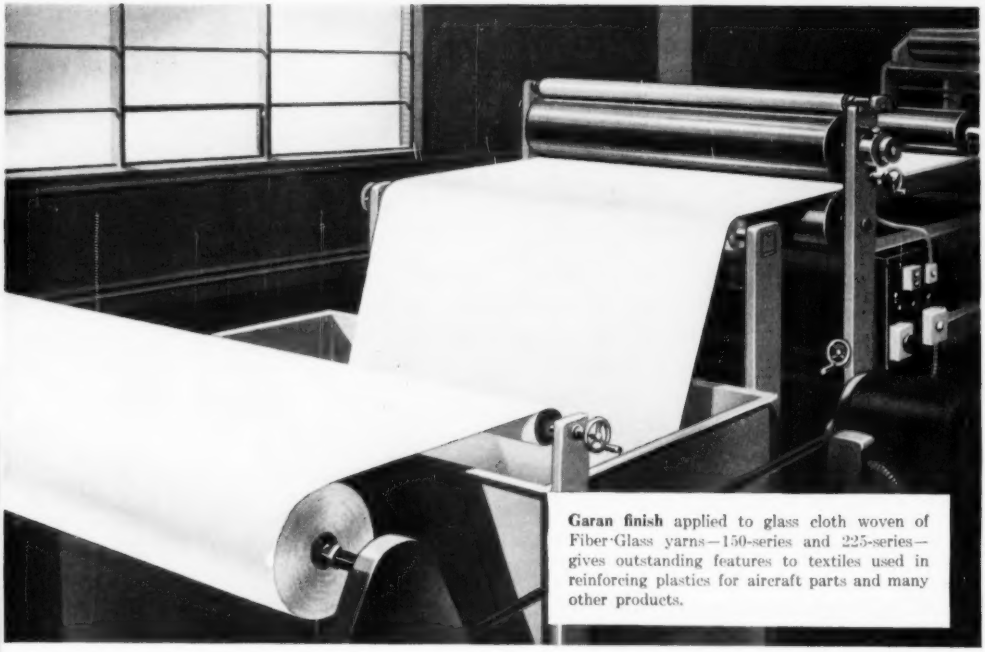

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not uniform, overtight filling will result, and the fabric will be ruined.

Wet Cotton Stored in Bags Oxidizes from Evaporation

Technical Editor:

Several hundred bags of cotton lint were left in a summer rain, where they were thoroughly wet. The centers of the bags of lint became unbearably hot to touch and much of the cotton showed burns. What made the cotton hot? (9574)

The warm rain penetrated the cotton thoroughly. The outside layers of the cotton dried out first and left the inside portion wet.

Further evaporation of the inner layers of cotton released heat that could not pass through the insulating surfaces of the dry cotton. As a result, the wet cotton reached a temperature near the burning point.

A Six-Harness Ribbon Is An Irregular Satin Weave

Technical Editor:

We have been weaving a satin ribbon on eight harness shafts. Can we make the same pattern on six harnesses? (9575)

If eight harness shafts are used to weave a satin ribbon, the ribbon is a regular satin weave. But a six-harness repeat is an irregular satin weave although it is similar in appearance to a regular satin.

Regular satin weaves repeat on five or more yarns where the number of harness shafts can be divided into any two numbers that have no common denominator. An irregular satin, such as a six-harness satin, cannot be divided into two factors that have a common divisor. The float on an irregular satin is one less than the number of harnesses in a repeat.

The arrangement of ends in a six-harness satin is 1-3-5-2-6-4. The ends of the first harness shaft are interlaced by the first pick of the filling, the ends of the third shaft by the second pick of filling, and this system is continued through a repeat of the pattern.

In most cases, a six-harness satin would satisfactorily replace an eight-harness satin.

Use Light Soap To Finish Fabrics Without Tacking

Technical Editor:

How can we finish woolen and worsted fabrics without tacking? (9576)

Finishing without tacking can be done on a conventional-type fulling mill. Avoid hard, pasty soaps. Use a light soap. Proper soap is the most important factor in fulling without tacking.

In first experiments, start with fab-

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rics that do not require heavy fulling.

The type of selvage weave influences the results from fulling. If a wide basket weave is used, little trouble will result.

Most types of woolen fabrics, including 18-oz. government-specification serge, can be finished without tacking.

Control Filling on Woolens To Prevent Tight Picks

Technical Editor:

How can we prevent tight picks on woolen fabrics? (9579)

Tight picks can be eliminated from woolen fabrics if the filling is controlled in its processing and also at the loom.

The filling should be quilled properly. Set the traverse stroke on the winder to keep the filling coming off the bobbin smoothly when the bobbin is placed in the shuttle. Irregularly placed filling in quilling will cause the filling to hang on high places over which the released end has to pass and will result in tight picks in the fabric.

Bobbins should be straight and free from splits, burrs, particles of paint and lacquer, and other projections that could obstruct the filling as it is pulled from the bobbin.

After the filling is wound on the bobbin, it should be steamed in a chamber for 15 min. before it is placed at the loom. Run up all the filling at the loom daily; filling that remains at the loom long enough to dry out cannot be controlled in the shuttle.

Shuttle tension must be carefully controlled. The shuttle fur should be fluffy and free from glue, long hairs, and hard places. Set the eye tension light to let knots pass freely through the eye. Set the shuttle tension the same on an almost empty bobbin of filling as on a full bobbin.

Set the picker-stick power to throw an easy shuttle; a harsh shuttle strains the filling.

If these mechanical conditions are met, the only other thing that can cause tight picks is an excessive number of knots in the filling.

Elimination of Lickerin Depends on the Stock

Technical Editor:

We are considering the installation of new card feeders.

To save space, we wish to eliminate the lickerin after the feed rolls and feed directly to the breast cylinder.

With this arrangement, would we be sacrificing in the quality of roving or increasing the damage to the card wire and breast cylinder?

What is the function of the lickerin cylinder?

What is the standard feed arrangement

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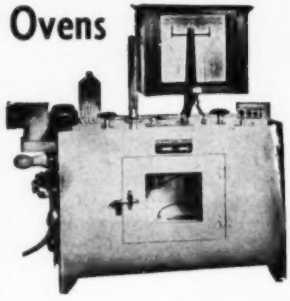

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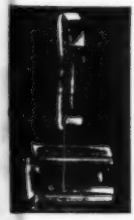

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Providence—Box 1187—Gaspee 1-0100

from the card apron to the first breaker cylinder for a carpet mill? (9580)

The lickerin conveys the stock from the card feed rolls to the breast cylinder, but its primary function is to take some of the load from the breast cylinder by breaking some burrs, shives, leaves, etc., and by opening lumpy stock. The lickerin roll has metallic wire, and any metallic-wire clothing helps to eliminate some impurities in the stock.

All new cards are built with the lickerin roll unless a special order is given.

Various feed arrangements from the card apron to the first breaker cylinder can be found. Besides the feed rolls and feed-roll stripper, a carpet mill using a two-cylinder card will use a lickerin. Another mill might eliminate the lickerin if the stock is quite clean or if a three-cylinder card is used. A mill using a three-cylinder card covered with metallic card clothing might eliminate the lickerin roll because it can stand more hardship than fillet clothing. A lickerin is preferred in the normal arrangement because if it were not used, too many lumps would enter through the feed rolls directly to the breast cylinder and increase the wear and tear on the clothing. Some strain is taken from the breast cylinder even if the lickerin only prepares the stock.

The type of stock used is the decisive factor in the question of quality as related to the use of the lickerin roll. Clean and even medium stock should not suffer too much, but stock containing a lot of impurities might.

Special Twisters Are Used To Cover Rubber Yarns

Technical Editor:

What machinery is used to cover fine elastic with cotton thread? (9577)

A covered-core yarn of rubber is similar to a spiral-type yarn. The core yarn is usually a single yarn but can be a ply yarn. It may be entirely covered or partly covered. The covering yarn is fed at a faster speed on the twister than the ground yarn and thus wraps around the ground yarn.

The covering yarn may be cotton, rayon, acetate, or nylon if the yarn is to be used in elastic fabrics. The rubber core may be cut strips of rubber or a round extruded filament of rubber. Usually the core is covered by being wound first in one direction and then in the other direction so that the core is completely covered. This yarn is similar to a ply yarn, but the rubber is not twisted.

Special machines are used, since the rubber is fed slowly but is drawn out

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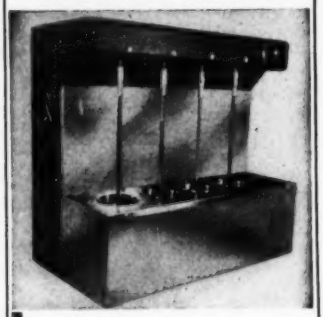

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INDUSTRIAL MARKETING (June 1952)

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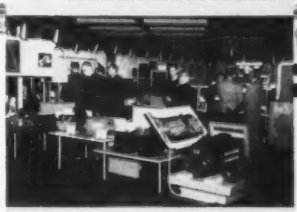
CIRCUIT RIDER (Vol. 6, No. 2, published by Electrical Construction and Maintenance)



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rapidly in order to stretch the rubber as the yarn is wrapped around it. This procedure allows the fiber yarn to stretch when the rubber is stretched.

Usually an elastic core of rubber is wrapped on a twister. The rubber end passes through the hollow center of a spool of yarn, which revolves rapidly and winds the strand about the rubber as it passes. If a second cover is desired, the rubber end passes through the center of a second spool, which revolves in a direction opposite to the first and wraps its cover yarn about the covered rubber in an opposite direction. When delivered, the rubber is contracted and causes the coils of the cotton yarn to close up.

Another method is used when the rubber core is covered in spinning. In this process, a light covering of a sheaf of roving fibers is wrapped around the rubber yarn.

Elastic-core yarns are used in weaving and knitting what is called twisting fabrics, such as one- or two-way-stretch materials.

Special skill and experience is required for the manufacture of this type of yarn, of which many modifications are being made.

Comber Noils Vary With Yarn Numbers and Staple

Technical Editor:

What is the average percentage of waste that results from processing combed yarns? Does the percentage vary with the staple length or with other factors?

(9581)

The waste on the preparatory processes would of course vary with the grade of cotton used but would run close to these standards for Middling to Strict Middling cotton.

Opening and Picking: 3.0 to 4.0%
Carding: 5.5 to 6.5%
Drawing and Lappers: 0.5 to 1.0%
Combing:

Yarn Number	Staple (in.)	Noils (percent)
12	1 1/8	16
20	1 5/16	15
30	1 1/8	20
40	1 7/16	20
40	1 1/8	16
60	1 1/4	22
80	1 3/8	27
116	1 7/16	27

As shown in this list, finer yarns call for longer staples (usually), and these longer staples generally require a larger percentage of noils to produce the necessary quality of nep-free yarn.

The general practice today in mills making 30s to 40s yarn from 1 7/16- to 1 1/8-in. cotton appears to be to limit the noil removal to 15 or 16%. This practice results in yarn of suitable quality for sheetings and similar goods.

Note: The length of staple (1 1/8 in.)

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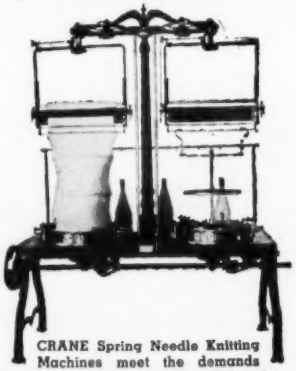

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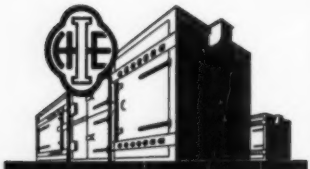

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given for this 12s yarn seems out of line for a coarse yarn. The reason for its use is that extremely high breaking strength of yarn is required.

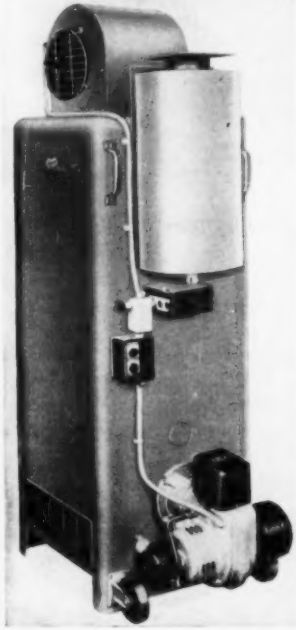
Textile Equipment News

(*Continued from page 168*)

Heat Given Off Where Needed in Open Areas

A new 168,000-Btu. unit with an adjustable vent for permanent installation or portable on-the-job use has been announced by Fageol Heat Machine Co., 5725 Mt. Elliot Ave., Detroit, Mich. Known as Model VO-168, the new machine operates on a counterflow principle of spraying heated air out across floor areas to form a 6-ft.-high blanket of warmth in a work zone. The machines are designed to heat men at work, not empty spaces.

When used with a flue and vented outside, Model VO-168 is recommended for permanent use in confined areas. In such cases heat output vented is only 130,000 Btu. per hr. When used without a flue, free heat is directed back into the blower and



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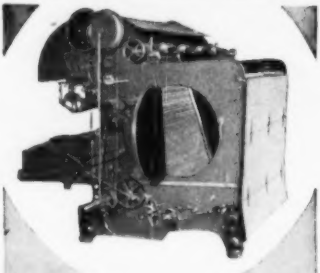

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The booklet shows you the amazing 4-color striped terry. It gives you a close-up of the "knitted-in" adjustable stitch construction that makes the fabric so fluffy and snag resistant. It describes the machine's versatility as a plain or striped terry knitter and tells you how it can be switched over, on the job, to knit the entire Supreme range of plain, patterned or striped jersey.

Included are illustrations of the knitting elements system and the general construction features plus production rates and weight and dimension specifications.

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NEWEST
Anti-Static Treatment for Synthetics
dextrol
LEKTROSTAT®
NYLON TRICOT IMPROVED
The anti-static agent Lektrostat B, when used (2 to 3%) in the last rinse after dyeing, gives nylon tricot an improved hand with better running and cutting characteristics as it possesses the qualities of a substantive softener. Garments made from treated fabric exhibit better shelf life since they are less prone to pick up dirt and lint through static electricity.
Give us your problem . . . write
DEXTER CHEMICAL CORP.
TEXTILE CHEMICAL DIVISION
P. O. BOX 1, BLVD. STA. NEW YORK 59

for safe, efficient
STATIC
elimination
the Simco
MIDGET
is best of all—and least expensive!
the SIMCO company
9th and Master Streets
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discharged "superheated," increasing output to 168,000 Btu. per hr.

Unvented, the new machine is recommended for on-the-job use in construction work, in large drafty buildings, and on loading docks. It is equipped with wheels for easy portability. It burns No. 1 or No. 2 fuel oil, kerosene, or diesel oil. A 10-gal. fuel tank can be attached to the unit as optional equipment.

Dimensions of the machine are 21x33x69 in. Weight is 345 pounds. The burner is Underwriter Laboratories' approved. The machine can be started or stopped by the snapping of a switch.

Nylon-Lined Bearings Eliminate All-Nylon-Bearing Drawbacks

THIN-WALL NYLON BEARINGS combine resilience with freedom from clearance limitations caused by temperature and moisture changes as well as from internal stresses.

A new type of nylon-lined bearing has been developed by Thomson Industries, Inc., Manhasset, N. Y., that consists of a thin, draw-steel outer sleeve and a free-floating liner of Du Pont FM-10001 nylon. Called Standard Thinwall "Nylined" bearings, they are being offered initially in ten sizes ranging in inner diameters from ¼ to 1¼ in.

Ordinary molded- or machined-nylon bearings have limitations due to the clearances required to allow for expansion resulting from temperature and moisture absorption, as well as distortion caused by internal stresses, the manufacturer says. Also, plain nylon bearings seemingly cannot be press fitted, and usually more nylon is used for structural reasons than is necessary for a bearing surface.

Thinwall "Nylined" bearings were developed to offer a low-cost solution to these problems and to provide resilient bearings that resist poundout, decrease friction, permit dry operation, dampen mechanical vibration, and minimize abrasion failures. The

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INDUSTRIAL ELECTRONICS
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NEW 200-PAGE 1953 EDITION JUST PUBLISHED!
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Write on your company letterhead. Radio Shack's catalog is COMPLETE from AMPEX to ZEPHYR. Over 15,000 listings of components and equipment, plus details, pictures, lowest net prices. Separate indexing of products and manufacturers. Full JAN data! The preferred buying and reference guide for P.A.'s, engineers, designers, schools, civil defense, government, service agencies. For your FREE copy, write TODAY to Department W
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LAZENBY FILLING WINDERS
Mills weaving
TIRE FABRICS
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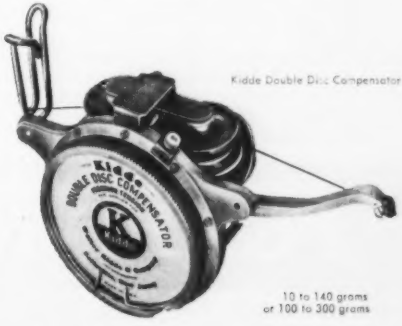
and other
HEAVY DUTY FABRICS
RELY on LAZENBY for COP and BOBBIN WINDERS
For either plain or automatic looms, we have the properly designed machine to meet your needs.
F. A. LAZENBY & COMPANY
3106 Elm Avenue Baltimore 11, Md.

how ABBOTT WINDERS are tension controlled at TEXTRON

Textron has about a thousand *Kidde* Double Disc Compensators on their Abbott Winders. Why? Because *Kidde* Double Disc Compensators: 1) Assure uniform tension throughout the quill 2) Control tension at bunch 3) Prevent sloughing off due to soft quills 4) Relieve yarn tension at *start* of bunch, thereby promoting longer quill and washer life 5) Prevent deformed and crushed quills when winding nylon. If you use Abbott Winders on any kind of synthetic yarn (rayon, nylon, Orlon, Dacron (Polyester Fiber) Dynel, etc.) *Kidde* Double Disc Compensators will improve the handling. Write today for full information.



Kidde Double Disc Compensator

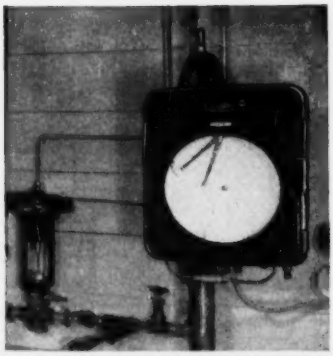
10 to 140 grams
or 100 to 300 grams

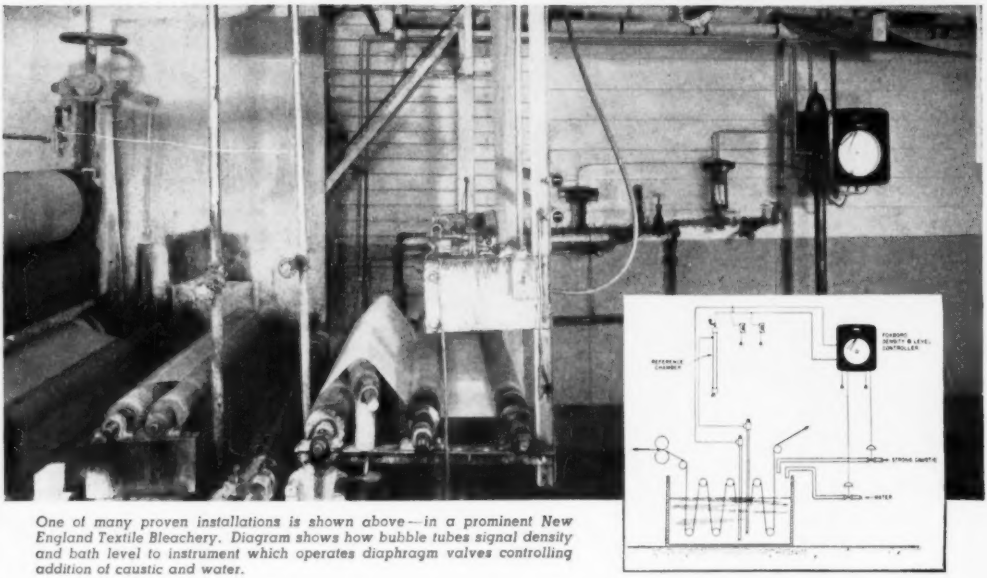
Kidde

Walter Kidde & Company, Inc.
1091 Main Street, Belleville 9, N. J.

 For more information, write direct or use Reader Service post card.

New, Improved Automatic Control for Caustic Density...





One of many proven installations is shown above—in a prominent New England Textile Bleachery. Diagram shows how bubble tubes signal density and bath level to instrument which operates diaphragm valves controlling addition of caustic and water.

assures new uniformity in mercerizing

Now you can get continuous top efficiency with uniformly higher quality finishes in your mercerizing operations. In addition to automatic control of caustic strength, the new, improved Foxboro Mercerizing Bath Control also maintains a constant bath volume. Density (calibrated directly in °Twaddle) and liquid level are recorded on the same chart, and controlled by the one instrument.

Completely automatic, this new mercerizing control system eliminates hand hydrometer sampling, log keeping, and guesswork on the part of operators. No matter whether wet or dry cloth is treated, it maintains uniform caustic strength . . . prevents under-processing, saves caustic waste. Caustic savings alone generally repay the installation cost in a few months.

Installation can be made on new or existing equipment without a serious interruption to operations. Maintenance is negligible. Get the complete facts on this automatic, money-saving improvement for your mercerizing equipment. Write **The Foxboro Company, 8410 Neponset Ave., Foxboro, Mass., U.S.A.**

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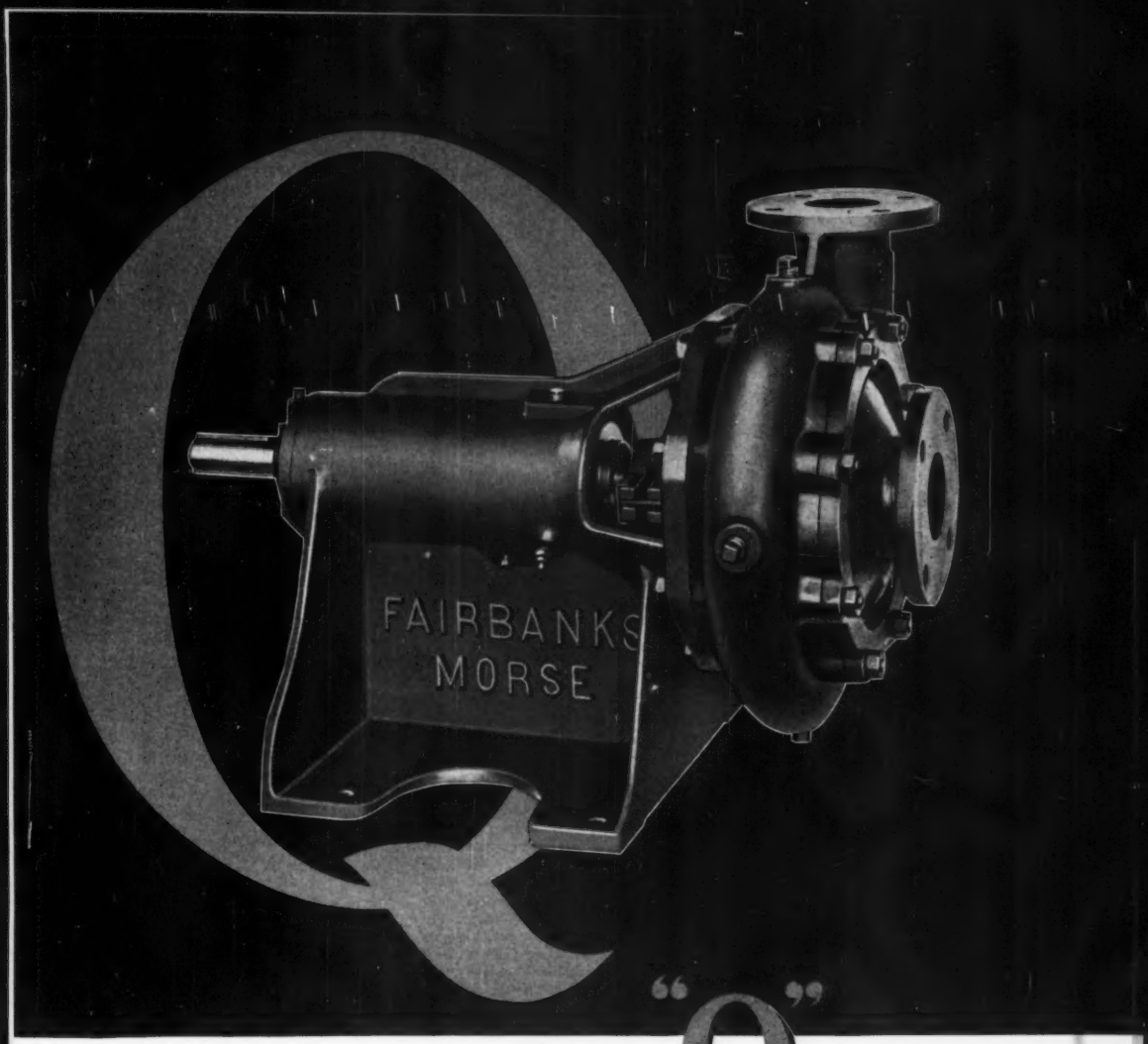

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Quality . . . that costs no more is yours when you choose Fairbanks-Morse Side Suction Centrifugal Pumps. Extensive engineering laboratories . . . production line methods with precision machining of all parts enable Fairbanks-Morse to offer you a side suction centrifugal with the design, workmanship and performance normally obtained only in highest quality split-case pumps.

Open type, single suction, high efficiency impeller . . . ball-bearing frame construction for long life and smooth operation . . . one-piece, solid cast frame . . . close-grained smooth cast iron volute . . . are among the many big pump features you'll find in these moderate priced side suction centrifugals.

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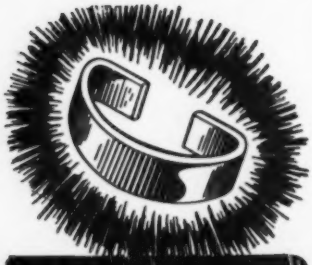

DARY
Ring Travelers

SOMETHING IS NEW—

Something is new in textiles every day — new fibres, new problems from changeovers, new chances for profit.

But in spinning and twisting, the fifty-year-old rule holds good: When in doubt, ask your friendly Dary representative. Profit by our experience at making Dary Travelers to "do it right".

Always specify
DARY Ring Travelers

THE DARY RING TRAVELER CO.
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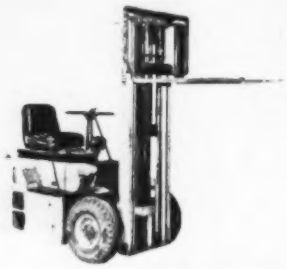
JOHN M. O'NEILL, BOX 720, ATLANTA, GA.
JAMES H. CARVER, BOX 22, RUTHERFORDTON, N. C.
CRAWFORD RHYMER, BOX 2261, GREENVILLE, S. C.

new bearings are lightweight and corrosion resistant.

The nylon liner is a replaceable bearing surface. In applications where lubrication is required, a spiral compensation gap serves to distribute lubricant in an axial direction as it connects with the center circumferential lubrication slot that receives the lubricant through the hole in the outer sleeve.

Redesigned Lift-Truck Uprights for Low Overhead Clearances



A FREE-LIFT UPRIGHT that has all the advantages of a standard unit with the added "plus" feature of elevation of the load without an increase in over-all height has been made available for its Model-20 lift truck by Hyster Co., 2902 N. E. Clackamas St., Portland 8, Ore. The new upright has been designed for applications where there is a minimum overhead clearance and where the inner upright of a standard model would strike obstructions before the load could be elevated to the desired stacking height.

Typical applications for the Model 20 with the free-lift include loading and unloading box cars and van trucks and working under low doorways, ceilings, and balconies.

Free-lift upright assemblies are available in 7-ft. 8-in. and 9-ft. 8-in. lift heights. Uprights are also available on special order in lifts higher than 9 ft. 8 in.

Centered-Keyway Cutter Requires No Bushings or Holders

A welded-steel-construction keyway-cutting machine that cuts keyways from ¼ to 1 in. and has a tiltable steel sub-table attached to the base has been put on the market by Sunray Co., Box 455, Spartanburg, S. C. Movement of the work table is obtained by a handle that rotates a shaft geared to the work table.

Called the Sunray Keyseater, the new cutter as regularly equipped can handle heights up to 8¼ in. The length of cut with a 20-in. cutter is 8¼ in., while with the 16-in. cutter it is 4 in. The table size of the tilting-table type is 26x26 in.

Keyways are cut by a broach. This arrangement gives the advantage of having several teeth cutting at once as well as the advantage of eliminating the tendency of the cutter to dig into the work.

The cutter itself is fastened to a steel cross head that has a reciprocating motion. The cross head is provided with steel cutter-clamping jaws that open and close simultaneously by means of a handwheel that clamps all cutters automatically in the center of the machine and brings the cutter central to the bore.

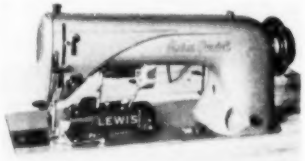
A steel uppercutter guide is also provided with self-centering steel jaws that are adjustable to the width of the cutter being used. This guide can be moved in or out of the resistance arm to bring the cutter teeth to a vertical position with the table. The cutter guide is equipped with a ball bearing for the cutter to reciprocate against.

The steel resistance arm can be rotated away from the cutter and out of the way while loading and unloading the machine; and when it is swung back into place, the arm automatically stops in its original position.

An adjustable stop is provided to regulate the movement of the table for cutting different depths. A steel swinging clamp-bar is provided for holding the work down. A steel angle V-block is used to back up the work while the keyway is being cut and to center bores to the cutter.

Lockstitch Attachments Save Effort and Time

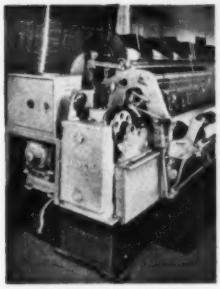
Many standard attachments, devices, and accessories are readily



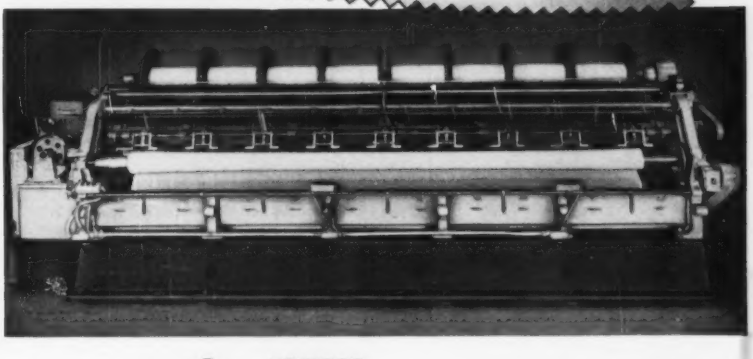
THE LEWIS PINKER is driven from the upper main drive of the sewing machine by means of a worm gear and is designed to perform the pinking operation without any interference with the sewing or proper functioning of the machine.

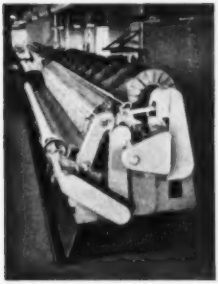
The size of the pink changes with the number of stitches to the inch. Short stitches give a fine notch, and the notch increases as the stitch length is increased. The attachment can be adjusted for plain sewing by moving a lever. The V-pinking knives can be reversed and interchanged.

Makes Quality Fabrics at HIGH SPEED!



Left end of machine showing enclosed gear box, pattern mechanism, motor and controls.





Right end showing continuous let-down and take-up.

. . . the NEW Kidde-Aveco Tricot Machine

You'll get improved quality in your fabrics . . . and turn them out *fast* on the Kidde-Aveco High Speed Tricot Machine.

A mechanical continuous let-down replaces the brakes for controlling beams. A new continuous take-up replaces the ratchet take-up. And . . . to minimize the periods of acceleration and deceleration, there's a high starting torque motor equipped with a quick stop. You'll find these improvements reflected in elimination of shade marks, reduction of stop marks so that they usually dress out, and in improvement of fabric quality.

Why not consider the Kidde-Aveco machine in your expansion plans? Write for complete information.

CHECK THESE FEATURES:

✓ **NEW CONTINUOUS LET-DOWN.** Easy to set and maintain because it's mechanical. Eliminates shade marks, reduces stop marks and improves fabric quality.

✓ **NEW VARIABLE SPEED DRIVE.** A turn of a hand wheel varies machine speed. No chain drive . . . no gears to be changed . . . quieter operation. Tachometer included.

✓ **NEW CONTINUOUS TAKE-UP.** Quality is established by a simple turn of adjustment screw. No gears or sprockets to be changed. No clutch. Once set, it requires no adjustment.

✓ **OTHER FEATURES.** These include improved plunger design, improved front guide bar lifting mechanism, quick-stop and jogging control.

KIDDE MANUFACTURING CO., INC.
BLOOMFIELD, NEW JERSEY

Kidde-Aveco
FOR TOP-QUALITY FABRICS

DANDUX

TOPS FOR RUGGED JOB EFFICIENCY*

* Even this rugged 2½ bu. Dandux basket withstands over 2,000 lbs. of lead shot in actual tests!

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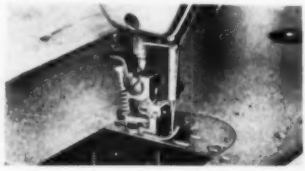
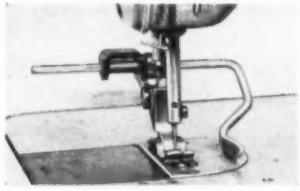
applicable to lockstitch machines manufactured by Union Special Machine Co., Chicago, Ill. The three described here have just been offered to interested mills by the sewing-machine manufacturer.



THE AUTOMATIC CHAIN CUTTER (1) automatically severs any chain of threads close to the work at the beginning and end of each seam; (2) saves time, increases production, and makes neater work; (3) saves thread by cutting chain approximately one stitch length from both ends of seams and eliminates the necessity of pulling surplus thread between stitching operations; and (4) feeds and trims the chain at all speeds and enables the machine to be operated continuously after running off the material without breaking the thread.

The new cutter also prevents unthreading of the needle when starting up after a stitching operation, regardless of positions of the take-up, and eliminates trimming operation on articles usually held together by the chain.



A NEW QUILTING GUIDE attaches to the pressure foot by means of a special bracket; thus is eliminated the necessity of removing the presser foot as has to be done in the case of guides attached to the presser bar. The guide can be used for following a previous line of stitching or as an edge guide.

12-Lb. Fire Extinguisher Has 20% More Fighting Capacity

Deviating from its standard 10- and 15-lb. sizes, Randolph Laboratories, Inc., 8 E. Kinzie St., Chicago, Ill., has produced a new, portable 12-lb. carbon-dioxide fire extinguisher with 20% additional fire-fighting capacity.

The new "12" is a compact, lightweight unit, 11 in. wide and 24 in. high, designed for the average employee. It has a thumb-trigger release and a new, lightweight, 9-oz. Flexrite nozzle that assures finger-tip aim. With no valves to turn or regulate, the unit gives panic-proof protection.

THIS MEDIUM-SIZED EXTINGUISHER is designed for the use of average employees. It has no valves to turn or regulate, only a thumb-trigger release.

Pocket Microscope Measures Twist, Fibers, Dye Penetration

INSPECTION INSTRUMENT called the "Optometer," a 50-power pocket measuring microscope, has been recently introduced by National Instrument Co., 5005 Queensbury Ave., Baltimore 15, Md. An engraved scale mounted in the body tube reads directly to 0.002 in. Estimations can easily be made to 0.0005 in. if needed. Precision, achromatic lenses, fully corrected for color and spherical aberration, result in a sharp image up to the very edge of the field of vision.

With the microscope, weave and twist can be examined and individual fibers measured. Fabric finishes, markings, lusters, and dry transfers can be inspected for penetration and quality. Faults in weaving and dying and damage of any kind are readily detected.

When used, the "Optometer" is placed on the surface of the part to be inspected, and a light is directed obliquely toward the tapered opening. The focusing knob is moved back and forth until the object is in focus. The linear dimension is read directly on the graduated scale.

The "Optometer" is priced at $19.50, complete with leather carrying case.

Correction

A footnote in the August issue stated that the article "Your Key to Future Success—Your Belief in and Attitude Toward Research" was based on a commencement address delivered at New Bedford Textile Institute. The address was actually delivered at Bradford Durfee Technical Institute, Fall River, Mass.

We regret the error and take this occasion to call it to the attention of our readers.

CALCO *dyelines*

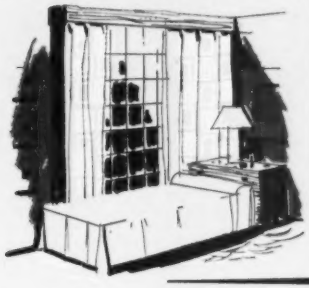
Advertisement
No. 28 of a series

PREPARED BY AMERICAN CYANAMID COMPANY, CALCO CHEMICAL DIVISION
DYESTUFF DEPARTMENT, Bound Brook, New Jersey

Calco

Here is the Fastest Vat Yellow of True Shade

Available in paste or powder form for your convenience, Calcosol* Fast Yellow Paste and Calcoloid* Fast Yellow Double Powder, excel all other bright vat yellows in fastness to light, chlorine, towel bleach and washing. This clear, bright true yellow will withstand prolonged light exposure even in pastel shades.



While they are suitable for most normal vat dye application procedures, best money value will be obtained with a minimum concentration of caustic soda and a maximum concentration of salt. Low liquor ratios also promote good color yield. These fast yellows level easily on both filament and spun viscose.

A Versatile Direct Brown

Calcodur* Brown BRL Conc. is a versatile direct brown. Its rich full brown shade along with its adaptability to a variety of dyeing conditions and diversified fabrics make it very popular in all dye houses using direct dyes. Good fastness in the self shade or after resin treatment, excellent leveling properties on piece goods, or yarn in any form, high economy coupled with a high degree of fastness are some of the outstanding attributes of this dye.

Package dyeing, skein yarn, beams, stock, piece goods—cotton or viscose; acetate white fabrics; for upholstery, drapes, sport shirts, slacks, ladies wear, are some of the many uses for Calcodur Brown BRL Conc.

*Trade-mark

Calcoloid Copper Brown Double Powder and **Calcosol Copper Brown Paste** are adaptable to a variety of dyeing methods and a wide range of fabrics. They are ideal for providing improved fastness in rusts, tans, dusty roses and other shades requiring a fast, red-brown element.

Stock, Package, and Beam Dyeing by Pigment or Reduced Methods for:	*Piece Goods Dyeing* On Jigs, Williams Units, Pad-Steam and Pad-Beostar		Other Methods
	Pigment Method	Reduced Method	Skein and Warp Dyeing for:
Bedspreads	Auto Seat Covers	Cotton Shirtings	Knitting Yarns
Chambrays	Bengalines	Drapery Fabrics	Labels
Drapery Fabrics	Corduroys	Dress Goods	Sportswear
Dress Goods	Cotton Shirtings	Sheetings	Cotton
Knitted Hosiery	Drapery Fabrics	Spun Rayon Shirtings	Viscose
Knitted Outerwear	Dress Goods	Upholstery Fabrics	
Toweling	Ducks		
Tufting Yarns	Sheetings		Screen Printing
Upholstery Fabrics	Slip Covers		
Webbing Yarns	Spun Rayon Shirtings		Draperies
	Twills		Specialty Fabrics
	Uniform Dress Goods		

An Essential Dye in Today's Market

Although not a new dye, Calcocid* Violet 4BXN has retained its popularity through years of use in textiles. Its very clear, bright violet shade makes it useful, along with other dyes, in producing brighter shades on wool. It can also be used as a toning color to brighten shades which are normally on the dull side.

Controlling shade changes in artificial light in shade matching is another important use, Calcocid Violet 4BXN being a good component to give a redder appearance under artificial light when this effect is desired.

Its fastness properties are not outstanding, but are good enough for the average application, and it works well with most of the other acid dyes which are dyed with acetic or formic acid.

This is an essential dye for producing the bright, clear shades required in today's market. It is manufactured from intermediates in which Calco has long been basic and which are carefully controlled to produce maximum brightness.

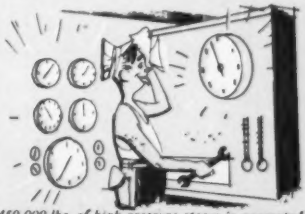
For the Textile Bookshelf

Aniline Black (*Calco Tech. Bulletin No.* 821).

A timely review of the important methods for Aniline Blacks, which are enjoying increasing acceptance from cotton and rayon printers. The fastness properties, uses and application methods of the various Aniline Blacks are discussed and fully described.

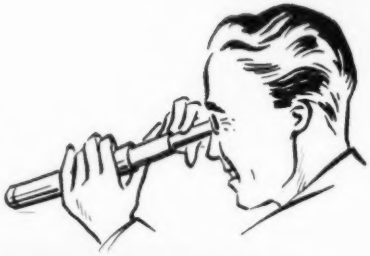
Application of Dyes to New Synthetic Fibers (*Calco Technical Bulletin No.* 826).

A carefully compiled record of existing data on the new synthetic fibers. Dyeing methods for the coloring of the new synthetic fibers and fastness properties to look for are covered in this study.



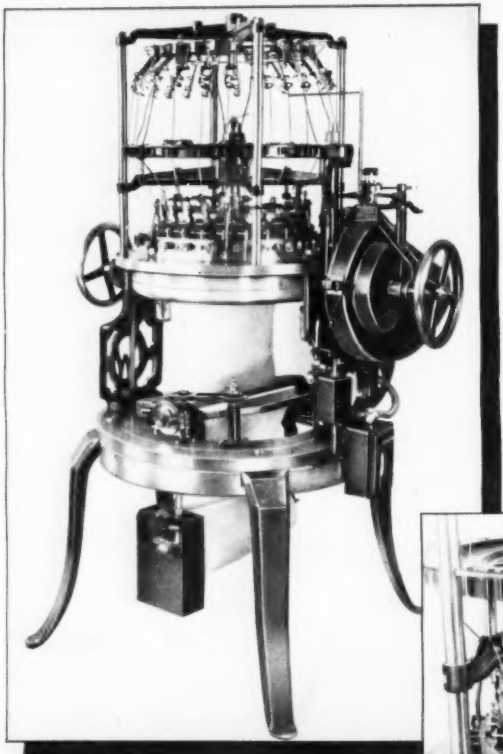
450,000 lbs. of high-pressure steam is generated every hour at Calco to furnish power and supply heat for the processing of dyes and intermediates.

If you're looking for TOP VALUE



the WILDMAN Multiple Feed Rib Machine is

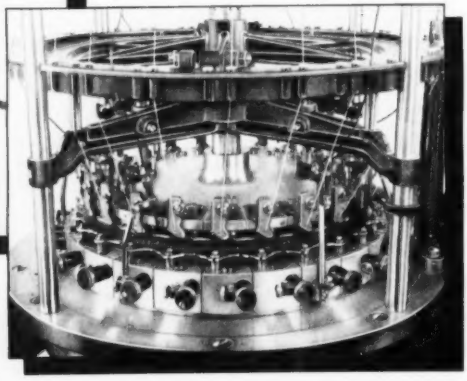
Precision Engineered for Top Performance



This is a production man's dream — for here you get better styling, uniform sizes and more than DOUBLE PRODUCTION . . . pattern designs increased in sports wear and all other knitted goods . . . uniformity in garment sizes for yarn is fed under even constant tension . . . Double production with a power increase of only about one-third.

PRECISION ENGINEERED

— TOP PRODUCTION PERFORMANCE



"One of Wildman's Finest"

WILDMAN MANUFACTURING CO. NORRISTOWN PENNSYLVANIA

Rayon Reports

Prepared Monthly for American Viscose Corporation

Spot Survey of New Suiting Blends Reveals High Content of Rayon Used

3 TYPICAL NEW SUITINGS MADE OF AVISCO RAYON BLENDS

What manufacturers are saying . . .

60% RAYON

Merrical, 60% Rayon, 40% Orlon—"A new tropical suiting that's going strong in men's, women's and children's wear." Merrimack Mfg. Co., Inc., Walter Dietze Textile Co.—Selling Agent.

95% RAYON

Multitone, 95% Rayon, Remainder Silk—"Just introduced, already enthusiastically received by the best names in the industry." Lankenau Company, Inc.

70% RAYON

Woosterlon, 70% Rayon, 30% Acetate—"A wonderfully luxurious flannel hand." J. Rosenholz, Inc.

A recent spot survey of manufacturers shows that the predominant fiber in most of the popular new suiting blends is rayon—ranging up to 95 per cent. The report confirms the fact that while much of the "news" is going to the newer synthetic fibers, rayon itself might best be termed the "miracle fiber" because of its usefulness in bringing out the best in blends, either of the tropical, winter or year-round types.

Manufacturers cite that among the advantages gained by the use of rayon in blends is its ability to impart fine appearance. In addition they value its well-known affinity for color that makes many dyeing and cross-dyeing effects possible. They also cite the ability to achieve blends that are sturdy and shrink resistant, and that possess a luxurious hand, through the use of rayon.

Obviously, a great factor in creating volume sales is the lowered cost that rayon makes possible, while maintaining high standards of quality.

MAKE USE OF *Avisco*® 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

AMERICAN VISCOSE CORPORATION

World's largest producer of man-made fibers

RAYON ACETATE VINYON® FILATEX®

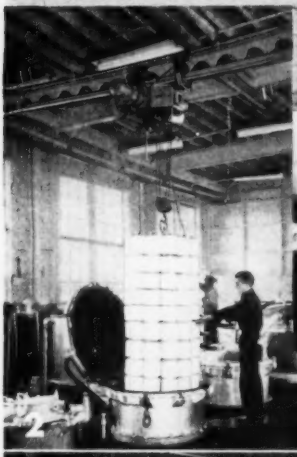
Sales Offices: 350 Fifth Avenue, New York 1, N. Y.; Charlotte, N. C.; Cleveland, Ohio; Philadelphia, Pa.; Providence, R. I.

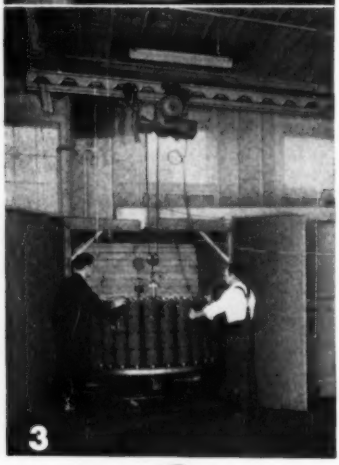
®TMC & CCC

1 Loading a 500-lb. package dyeing machine with the Tramrail Crane. This same 2,000-lb. capacity hand-propelled crane with electric hoist is used for handling operations shown in other illustrations.

2 Lowering a load into a 300-lb. dyeing machine.

3 Placing a load of yarn into a drying chamber.





Package Dyeing and Drying Made Easy

Handling packaged yarn through dyeing machines, extractors and drying chambers is fast and easy when Cleveland Tramrail equipment is provided.

Carolina Insulating Yarn Company, Winston-Salem, N. C., is one of many textile mills that have found it profitable to use an inexpensive hand-propelled crane with electric hoist to do this work. They have eliminated the need of hard manual lifting and hauling. As a result, production has been stepped up, costs cut and safety aided.

Because so many important advantages ensue from the installation of Cleveland Tramrail equipment, we urge you to study your handling operations and check with a local Cleveland Tramrail engineer as to what can be done to best serve your needs.

GET THIS BOOK!

BOOKLET No. 2008. Packed with valuable information. Profusely illustrated. Write for free copy

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THE CLEVELAND CRANE & ENGINEERING CO.
8573 EAST 187TH ST. WICKLIFFE, OHIO

CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

Do You Spin or Twist?

THEN YOU SURELY NEED

HERR CONICAL RINGS

- **Stops Yarn Breakage**
- **Permits Heavier Doffs**
- **Keeps Yarn Cleaner**
- **Produces Smoother Yarn**

Each textile fiber shown above presents wonderful opportunities —each has special characteristics and handles differently.

Ask us how yarn tension uniformity is controlled with the Herr Conical Ring... How we reduce ends down... How controlled lubrication affects cleanliness.

You can adapt your equipment for any textile fiber or blend if you use Herr Conical Rings.

Ask for help on your problem.

Gentlemen:
Please send literature on Herr Conical Rings and Herr Flyers.
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Position .....
Company address .....
Our problem is .....

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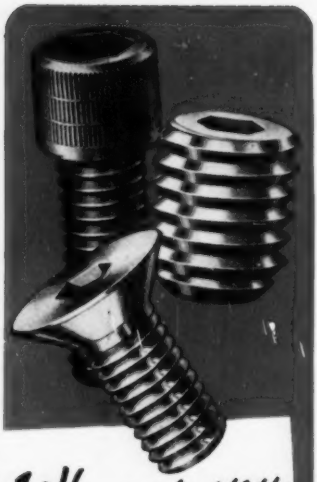
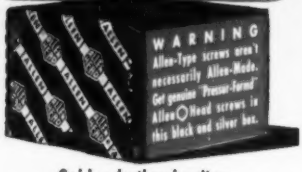


Wherever you use fasteners

√ . . . . . under vibration
√ . . . . . under strain
√ . . . . . in limited space
√ . . . . . for fine adjustment
√ . . . . . in inaccessible places
√ needing strength in small sizes
√ . . . . . in compact design
√ . . for maximum holding power
√ . . . . . for fastening thin pieces

. . . use genuine
ALLEN ⬡ HEAD
socket screws and keys

Class 3 fit, quality controlled uniformity and strength, wide range of standard sizes.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Allen-Type screws aren't necessarily Allen-Made.
Get genuine "Pressur-Formed" Allen⬡Head screws in this black and silver box.

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MANUFACTURING COMPANY
Hartford 2, Connecticut, U. S. A.

Paper Fabrics

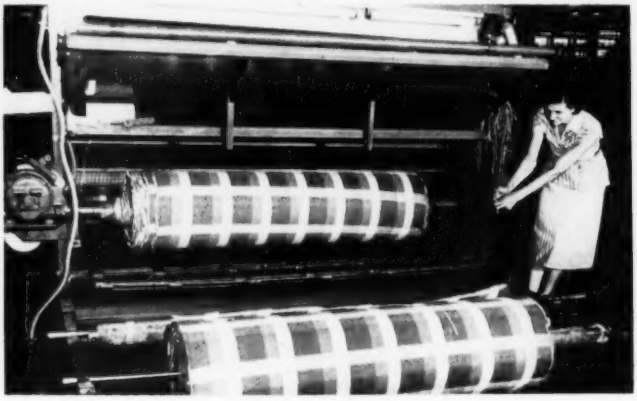
(*Continued from page 141*)

when the yarn is running right and not breaking.

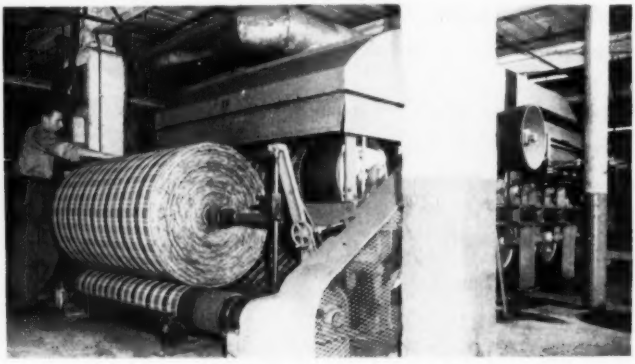
"In our weaving department, some days the warps run out so fast you can't keep up with them. Warps coming out of 62 looms running on paper fabrics can run as high as 25 a day, but 14 to 16 is average. Paper warps just weave fast, that's all. As a result, looms frequently stand empty longer than ever would be allowed in a cotton mill, for example, as our loom cleaners clean up. It takes about an hour to clean a loom. The job is done regularly when a warp comes out. Two hours is about the best time possible between the running out of a warp and the starting up of a new one.

"As a result of our present warp situation, we have granted our weavers a guaranteed wage scale rather than a piece rate.

"We still have areas where we can improve our production flow. We plan to get over-all humidification of 60 to 65% r.h. at 80° F. And our employees are constantly improving their skills and techniques. The future of this Waynesboro operation looks very good."

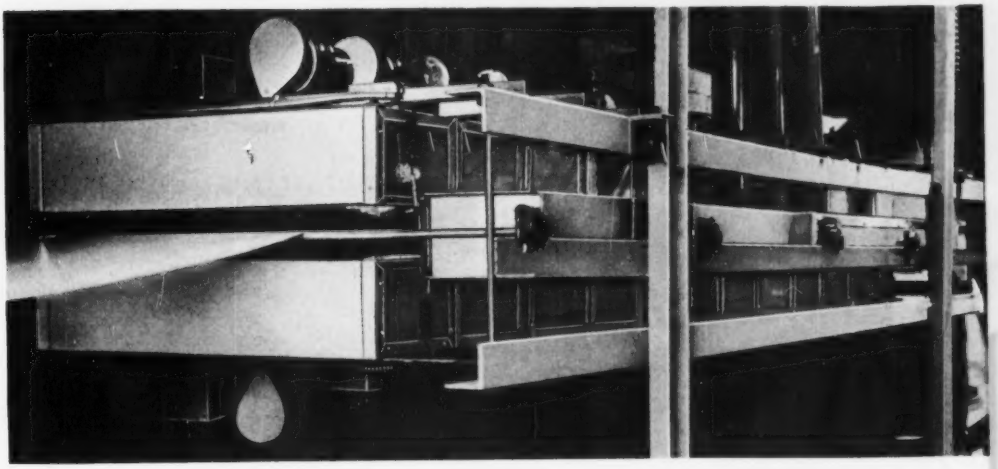


REPAIRING operation includes standard inspection procedures. Many more repairs of broken picks, slugs, and knots can be engineered by hand reweaving than are possible with natural or synthetic fibers. Florene Woody shows how she doffs an inspected roll by herself into a waiting cradle if no doffing help is immediately available. Then she threads in, also by herself, the uninspected roll in the foreground so that no downtime results. The "repaired" roll is then slid down a chute to the finishing department on the lower floor.



JUMBO ROLL about ready to be doffed from this waterproofing machine by Otis Lam is a result of six or eight 100-yd. inspection-table rolls being sewn together for finishing purposes. Fourteen 30-in.-dia. Butterworth stainless steel dry cans complete, at 235° F., the impregnation of the waterproofing wax emulsion (water-soluble until heated) put on the fabric at an emulsion box at the starting end of the range. Succeeding processes include three-roll pneumatic-pressure calendering to the fabric thickness desired by the customer, lacquering, final inspection, wrapping, and shipping.

HOW TO LIFT 340 LBS. *OF* H_2O*...



with only 11 feet of heat

Most efficient heat yet devised for boosting the rate of all drying systems is the new, high-speed SupeRadiant Heater. Typical of its efficiency is the case history cited herewith.

SupeRadiant heating panels placed on present equipment save valuable floor space. Their initial cost and operating cost are both low. Also, their efficiency exceeds ordinary forms of infra-red heat by more than 50 per cent.

Panels are built to suit any fabric width. Low pressure air circulators conduct air through the entire surface of the unit thereby helping the exhaust ducts take away the moisture laden air. Heater temperatures scale up to 1300° F and are closely controlled.

Heaters are used close to the material achieving maximum use of the energy developed. The radiant heat is poured into the work rather than the surrounding air.

Use these SupeRadiant heaters as a primary source of heat or as a booster to step up present drier efficiency. Write us today for additional information.

* CASE HISTORY

Cloth — 4 yards lb. 36" Cotton
Speed — 150 feet per minute
H_2O Content — 50% moisture reduced to 5%
Operating Cost — $1.86 per hour @ 1¢ KWH to dry 3000 yards of cloth
Space Required — 11 feet

SILL INDUSTRIES
185 MAPLEWOOD AVENUE, MAPLEWOOD, N. J.
distributor for
INDUSTRIAL RADIANT HEAT CORPORATION

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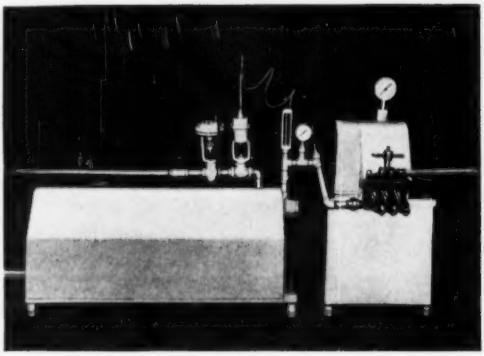
Continuous size preparation and increased loom efficiency with the new



Scott & Williams Hydropulse

What the Hydropulse is: like many important developments, this unit is basically quite simple in design. It consists of a heat exchanger for heating cold starch mixes to the swelling point, and a high pressure homogenizer to convert the mixes into finished size of controlled viscosity.

What it can do for YOU: the Hydropulse will give you *continuous size preparation*. Costly batch methods have been completely eliminated. You get fresh size at the push of a button.

In addition to increased weaving efficiency you get: savings on starch costs, savings on steam costs and better process control. You can be sure of all these benefits because the Hydropulse is specifically designed for textile use by a company that has specialized in textile machinery for over 80 years... Scott & Williams, Inc.

☆

For more information: write today to one of the addresses below.

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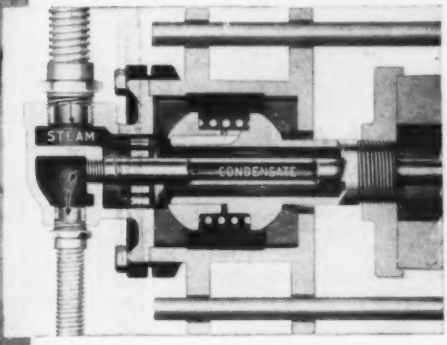
Favorites throughout the Textile Industry

The Type L is covered in the big Johnson Joint Catalog "JJ"; Type S in a special Catalog "JS". Write for copies.

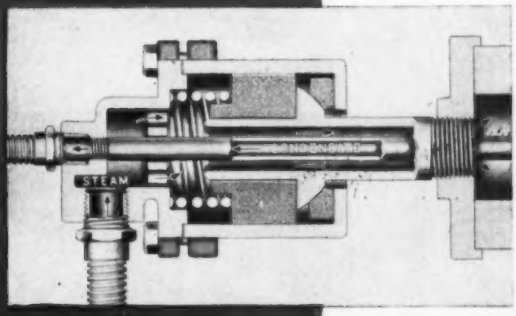
TYPE L JOHNSON *Rotary Pressure* JOINTS



Very much in the limelight these days, the Type L offers a simpler method of installing Johnson Joints that brings improved operation in the bargain.

The Type L has lugs added right to the body, so that simple rods can be used to support the weight of the joint and the connections. This arrangement removes all excess weight from the seal rings, leaving them only their primary task of maintaining an effective seal. Longer life, better efficiency and even more trouble-free service are direct results.

A typical installation of the Type L is shown here. The cross section view shows that it retains in full all the packless, self-lubricating and self-adjusting features of Johnson Joints.



TYPE S JOHNSON *Rotary Pressure* JOINTS

The self-supporting Type S is an ideal answer where, for example, support rods for the Type L cannot be readily provided, or piping connections present some difficulty. Since it shifts as the roll shifts and consequently defeats misalignment completely, it is particularly suited for service on calenders.

The Type S carries its own weight from a cost standpoint too. It is completely packless, self-lubricating and self-adjusting.

JC *Products of The Johnson Corporation*

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Rotary Pressure Joints • Compressed Air Separators and Aftercoolers
Direct Operated Solenoid Valves • "Instant" Steam Water Heaters

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- **ELIMINATES** indicating solutions, measurement of sample, and color matching.
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And Provides—

- **INSTANT,** continuous, direct reading of pH with no buttons to hold down or dials to turn.
- **CONTINUOUS** reading over full pH range with no change of solutions or adjustments.

REVOLUTIONARY PROBE UNIT PROVIDES ON-THE-SPOT pH READING ANYWHERE

- **ELIMINATES** supports, holders, beakers, and separate electrodes.
- **ELIMINATES** trips to the laboratory.

Completely self contained in waterproof ever-ready case with shoulder strap.

PRICE $125.00

Instrument size: 3x5-7/8 x 2-1/2 inches
Case size: 3-3/4 x 6-1/2 x 4-1/8 inches
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News OF THE MONTH

New Insulating-Type Fiber. "Fiberfrax," a new ceramic fiber that possesses excellent heat-resisting properties but that is not yet available for textile-mill use as a raw material, has been brought out by Carborundum Co., Niagara Falls, N. Y. Containing aluminum oxide, silica, and some modifying agents, and produced in an electric-furnace melting process similar to that used for making aluminum-oxide abrasives, Fiberfrax for the moment will be excellent as an insulating material. When mixed with other textile fibers, the new product can be carded, spun, and woven. Fibers range up to 3 in. and are calculated as weighing about 2 lb. per cu. ft.

Mt. Hope Finishing Co. in Trouble. Mt. Hope Finishing Co., formerly of North Dighton, Mass., has been ordered in a preliminary report by the National Labor Relations Board at Boston to offer jobs to all employees the company discharged when it moved to Butner, N. C., last year. An NLRB trial examiner at Boston, Charles W. Whittemore, declared the company guilty of violations of the Taft-Hartley law.

The orders are believed to be among the most sweeping issued in New England in the past decade. If exceptions are filed, the decision becomes subject to review by the full NLRB at Washington, a step that would possibly involve several months' delay before a final decision finding could be reached.

The trial examiner held that (1) the company's locking up its plant in North Dighton last year was discriminatory, (2) the company's refusal to bargain with the TWUA, CIO, was a violation of the law, and (3) the company's laying off of 185 employees on July 31, 1951, was discriminatory.

Officials of the company testified during the hearing that they stood ready to reopen North Dighton, but that business had been lacking. Most of the land and buildings at North Dighton were sold to Dighton Industries, Inc., an affiliate of the Tower Iron Works, Providence, R. I., which has begun the production of aircraft components there.

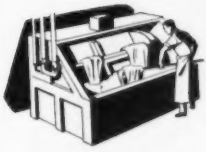
ASQC Forms Textile Division. An important "first" for the textile industry occurred on August 23, 1952, at Clemson, S. C. On that day the Textile Division of the American Society for Quality Control was officially formed. ASQC is made up basically of committees for various industries, but no major division had even been formed before. The textile industry, in its continuing efforts to improve and control quality, is the first industry to be recognized by ASQC with a division of its own.

The new division is an outgrowth of a Textile Technical Committee formed about two years ago under the then-existing ASQC regulations. W. S. Smith, Research Division, West Point Mfg. Co., West Point, Ga., was temporary chairman of this committee; and John Reynolds, Celanese Corp. of America, Rome, Ga., was chairman of the steering committee.

Papers delivered at the Clemson meeting proved that the organization is not for statisticians alone. The information, which was extremely practical, was delivered in plain language

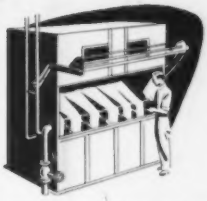
NEW OFFICERS of the Textile Division, ASQC, are (l. to r.): John Reynolds, Celanese Corp. of America, Rome, Ga., secretary; Gardner M. Hailes, Avondale Mills, Sylacauga, Ala., chairman; Edward S. Rudnick, Wamsutta Mills, New Bedford, Mass, Northern representative; W. S. Smith, West Point Mfg. Co., West Point, Ga., Southern representative; Cleveland Adams, Alabama Polytechnic Institute, Auburn, Ala., vice chairman; and Dame S. Hamby, N. C. State College, Raleigh, N. C., treasurer.

If you need OXALIC ACID



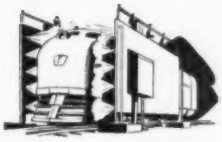
LEATHER & FURS—Vegetable tanning of sole and upper leathers; also bleaching of furs

TEXTILES—For removing soil or smears after black aniline printing; in development of color when printing; for removing rust stains



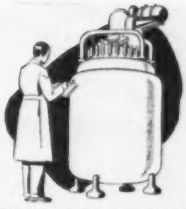
DYES—In manufacture of dyes

for these or other uses...



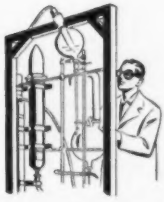
CLEANERS—For cleaning rust from railroad cars and buses; also as an auto radiator cleaner

PENTAERYTHRITOL — In manufacture of pentaerythritol, used in making surface coating resins and explosives

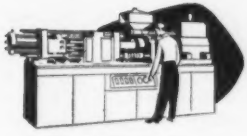


CHEMICALS—For manufacturing oxalates and other chemicals

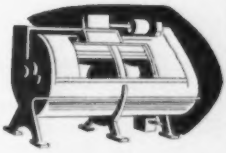
Call on GENERAL CHEMICAL



DRUGS—For manufacturing pharmaceuticals, antibiotics



PLASTICS—As a polymerization catalyst or decoloring agent



LAUNDRIES — For laundry sours and rust removers

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1. Completely replaces wooden skewers.
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4. Creel boards easily cleaned. Overhead suspension leaves open creels. Blowers more effective.
5. Better spinning of spun rayon.
6. Easier creeling; less physical effort and fewer motions required.
7. Improved brake attachment prevents overrun and backlash.
8. Now cadmium plated and stainless steel balls more rust resistant.
9. Time-tested product—holders in operation for over ten years.
10. Easy to install; practically no upkeep.

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Here's how: By making them of Uscolite, the remarkable new rubber-plastic compound. Quills made of this wonderful material not only are resistant to water, but they retain their shape throughout their entire service life. They last two to three times longer than wooden quills.

Not only that, but Uscolite quills do not chip or splinter, nor do they soften at the tip when run through conditioning agents. They have high-surface friction, which means excellent holding properties which eliminate or minimize sluffing of the yarn.

Like every other product in the complete line of United States Rubber Company's textile mill specialties—all the way from warp tubes to cop butts, Uscolite quills *last longer* and permit a *higher quality* of textile output. Write for more information today.

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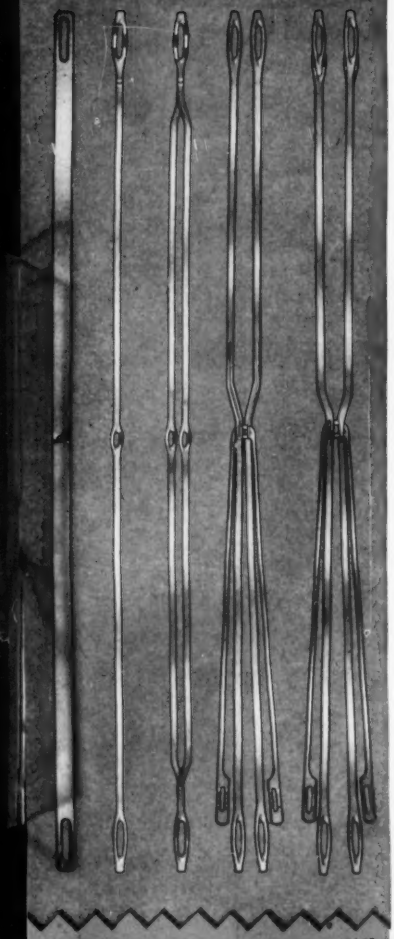


There is a specific type of heddle in all sizes and weights, for every type of fabric. Be sure to consult our Field Engineers for guidance in selecting the most practical eye for the special warp thread you are using. They are conversant with the mill problems and understand the importance of equipment and product performance . . . Just phone, write, or wire and they will be ready to serve you.

NEWS *of the Month*

aimed at improving quality. And the presentations showed that statistics are only one means to an improved quality.

The next meeting of the new division will be held in conjunction with the annual meeting of ASQC in Philadelphia next May. Chairman of the membership committee is J. B. Denmark, Pepperell Mfg. Co., Lindale, Ga.

New TWUA Southern Drive. Encouraged by a 5¢ wage increase awarded by an arbitrator to workers in a "major Southern textile company," the Textile Workers Union of America, CIO, will renew a 17-mo. campaign to raise wage rates in Southern mills, Emil Rieve, the union's general president, said recently. A decision by Curtis G. Shake of Vincennes, Ind., attorney and arbitrator, in an action brought by TWUA-CIO, awarded a 5¢ increase (about 6½¢ an hour) to 1,200 workers in the Columbia Mills Div., Mt. Vernon-Woodberry Co., Columbia, S. C., the union reports.

"I do not imply that we are satisfied with this decision or that we will limit our objectives to this figure," Rieve explained. "For one thing, the arbitrator declined to award a cost-of-living escalator clause, which we requested." Rieve also said TWUA-CIO's Southern agreements expired (or could be reopened) at various dates beginning last month.

"Lanfix" Prevents Wool Shrinkage. A new shrinkproof process for wool, called the "Lanfix" process, has been reported as developed by the Research Laboratories of British Cotton and Wool Dyers, Manchester, England. The shrinkproofing is a wet, non-chlorine process that can be carried out in the ordinary wet-processing plant and is applicable to wool in all forms—from raw stock to the finest single yarn or fabric. The procedure is said to have none of the irregular-dyeing drawbacks of the chlorination

Textile Calendar

AATT, monthly meeting, Builders Club, New York, Oct. 1, 1952.

AATCC, Western New Eng. Sect., Rapp's Restaurant, Shelton, Conn., Oct. 3, 1952.

17th Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 6 to 11, 1952.

AATCC, Pacific Southwest Sect., Ojai County Club, Ojai, Calif., Oct. 6, 1952.

Industrial Packaging and Materials Handling Exposition, Coliseum, Chicago, Ill., Oct. 14 to 16, 1952.

The Quartermaster Assn., annual convention, Biltmore Hotel, Atlanta, Ga., Oct. 16 and 17, 1952.

Packaging Institute, annual forum, Hotel Commodore, New York, Oct. 20 to 22, 1952.

Natl. Safety Congress and Exposition; Conrad Hilton, Congress, Morrison, and Sheraton Hotels, Chicago, Ill.; Oct. 20 to 24, 1952.

Beltwide Cotton Mechanization Conference, San Joaquin Valley, Calif., Oct. 22 to 24, 1952.

AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., Oct. 24, 1952.

AATCC, Western New Eng. Sect., Rapp's Restaurant, Shelton, Conn., Nov. 3, 1952.

Canadian Woollen and Knit Goods Mfrs. Assn., annual meeting, Chateau Frontenac, Quebec City, Que., Nov. 4 to 6, 1952.

AATT, Monthly meeting, Builders Club, New York, Nov. 5, 1952.

AATCC, council meeting, Boston, Mass., Nov. 6, 1952.

AATCC, general research committee meeting, Boston, Mass., Nov. 6, 1952.

AIEE, Textile Subcommittee, conference, N. C. State College, Raleigh, N. C., Nov. 6 and 7, 1952.

AATCC, national convention and dyeing and finishing exposition, Hotel Statler, Boston, Mass., Nov. 6 to 8, 1952.

Carded Yarn Assn. and **Southern Combed Yarn Spinners Assn.,** annual-convention cruise to Bermuda, Nov. 14 to 22, 1952.

TRI, annual meeting, and exhibit, Hotel Commodore, New York, Nov. 17 and 18, 1952.

American Standards Assn., annual meeting, Waldorf-Astoria Hotel, New York, Nov. 19, 1952.

20th National Power Show, Grand Central Palace, New York, Dec. 1 to 6, 1952.

AATT, monthly meeting, Builders Club, New York, Dec. 3, 1952.

AATCC, Northern New Eng. Sect., annual meeting, LTI, Lowell, Mass., Dec. 6, 1952.

AATCC, Western New Eng. Sect., Rapp's Restaurant, Shelton, Conn., Dec. 12, 1952.

1953

Plant Maintenance Show, Public Auditorium, Cleveland, Ohio, Jan. 19 to 22, 1953.

Air Conditioning Show, International Heating and Ventilating Exposition; International Amphitheatre, Chicago, Ill.; Jan. 26 to 30, 1953.

ASTM, spring meeting, Detroit, Mich., March 2 to 6, 1953.

ACMI, annual convention, Palm Beach Biltmore Hotel, Palm Beach, Fla., March 26 to 28, 1953.

22nd AMA National Packaging Exposition, Navy Pier, Chicago, Ill., April 20 to 24, 1953.

Natl. Assn., of Hosiery Mfrs., annual convention and conference, Claridge Hotel, Atlantic City, N. J., April 27 and 28, 1953.

Knitting Arts Exhibition, Atlantic City Auditorium, Atlantic City, N. J., April 27 to May 1, 1953.

Materials Handling Exposition, Convention Hall, Philadelphia, Pa., May 18 to 22, 1953.

Textile Institute, annual conference, Llandudno, North Wales, May 25 to 30, 1953.

ASTM, annual meeting, Atlantic City, N. J., June 29 to July 3, 1953.

International Exposition of Fabrics, Fibers, Finishes, and Yarns, Waldorf-Astoria Hotel, New York, July 27 to 31, 1953.

AATCC, national convention, Stevens Hotel, Chicago, Ill., Sept. 17 to 19, 1953.

1954

Knitting and Allied Crafts Exposition, Grand Central Palace, New York, April, 1954.

American Textile Machinery Exhibition, sponsored by American Textile Machinery Association, Atlantic City Auditorium, Atlantic City, N. J., April 26 to May 1, 1954.

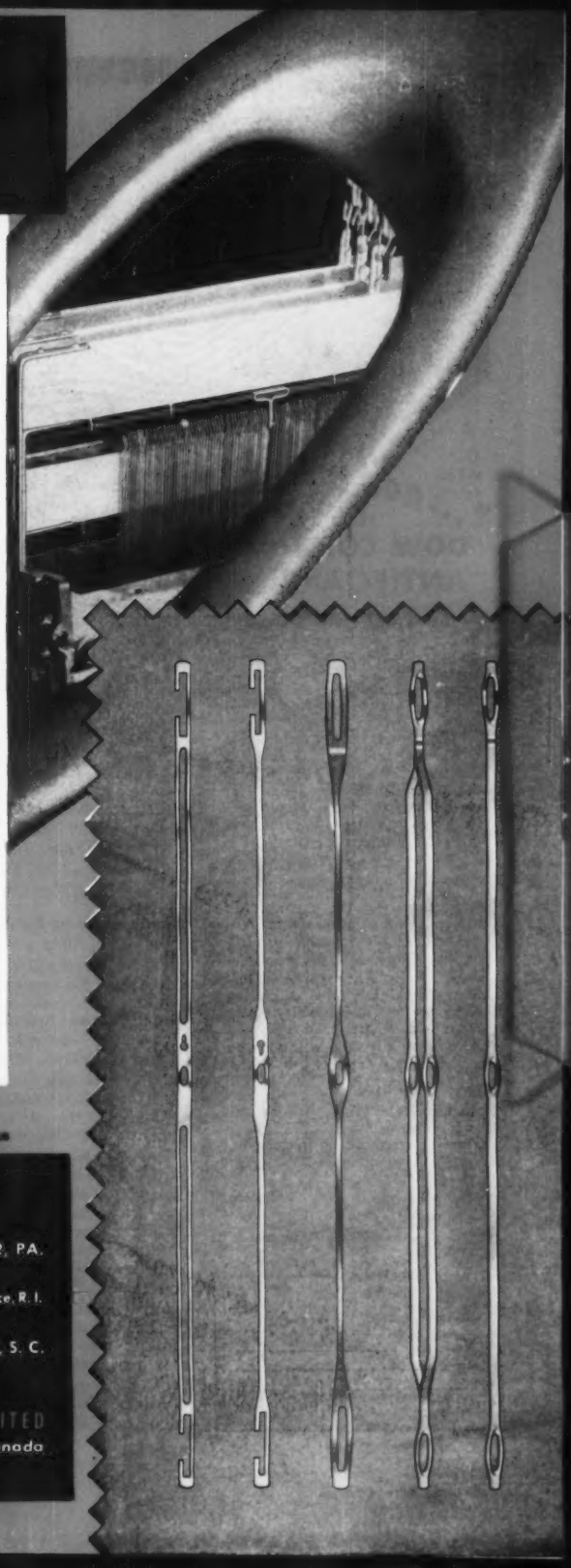
Stehedco and Southern

WHEN YOU LOOK A HEDDLE *IN THE EYE*...

you really see through the business of weaving superior fabrics, for it is the shape and polish of these all important eyes which will determine the quality of your finished product. It is at this point the Steel Heddle Mfg. Co., has concentrated its efforts in order to give you a heddle with an eye so scientifically designed all chafing and jagging is reduced to an absolute minimum.

The perfection attained in 52 years of manufacturing flat steel heddles is the result of constant experimentation on the part of STEHEDCO'S skilled craftsmen. It is this know-how and the high standard maintained in the selection of materials used that has given STEHEDCO its world-wide reputation for producing *superior quality Flat Steel Heddles.* STEHEDCO flat steel heddles not only possess these scientifically shaped eyes and highly polished finish, but also have rod slots so perfectly designed that they permit the heddles to "float" with the tension of the warp. *Stehedco Quality* means *Superior Quality* . . . that is why they are preferred by nine out of ten mills.

Products that "Weave the World's Needs"



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Just a pinch of Antifoam A kills foam in textile sizes without hampering the wetting action of the size itself. It's effective in gelatin, starch or casein, in concentrations as low as 0.002 ppm.

That kind of performance is why you'll find that this remarkably effective silicone is the most economical defoamer you've ever used. Bland and non-inflammable, its high order of chemical and thermal stability prevents it from contaminating or reacting with most foaming media.

Easily dispersed in a wide variety of solvents, Antifoam A is effective in most aqueous foaming systems. Where solvents cannot be used, specify Antifoam A Emulsion. Containing 30% Antifoam A by weight, this stable, easily dispersed suspension may be introduced directly without the use of carrying agents.

If high production costs are pinching your profits, pinch them back with Antifoam A. Evaluation samples available upon request. Simply fill in and mail the coupon today.

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NEWS *of the Month*

process. It is even said to have an appreciable brightening effect on dyed wool that preserves its "new" appearance.

NAWM Sees Eisenhower. Republican presidential candidate General Dwight D. Eisenhower has been given a memorandum, describing the wool branch of the textile industry and its views, by 10 wool manufacturers, members of the executive committee of the National Assn. of Wool Mfrs., New York. The memorandum said there were more than 700 wool textile firms operating more than 800 establishments. Wool manufacturing, called a "component of our economic system vital to the mounting and maintenance of a defense organization," was cited as providing employment for 150,000 to 200,000 people; and in 1950 it paid $469,000,000 in wages and salaries.

Attending the meeting were Ames Stevens, Ames Worsted Co., NAWM president; Harold J. Walter, Bachmann Uxbridge Worsted Corp., chairman of the executive committee; R. J. Fontaine, Guerin Mills, Inc.; Ralph K. Hubbard, Packard Mills, Inc.; John L. Hutcheson, Jr., Peerless Woolen Mills; John H. McGowan, Wyandotte Worsted Co.; Abbot Stevens, J. P. Stevens & Co., Inc.; Frederic W. Tipper, Cascade Woolen Mill; Arthur O. Wellman, Nichols & Co., Inc.; Francis W. White, American Woolen Co.; Eugene O'Dunne, Jr., NAWM Washington counsel; and Edwin Wilkinson, NAWM executive vice president.

Spinner-Breeder Conference Plea. A plea for a closer coordination of research and educational activities to strengthen the competitive position of cotton was made recently at the ninth annual Spinner-Breeder Conference in Greenville, Miss., by Col. Burris C. Jackson, Hillsboro, chairman of the Statewide Cotton Committee of Texas. Closer understanding by all segments of the cotton industry of the problems peculiar to each individual group was urged.

Col. Jackson pointed out that certain cotton characteristics are desirable and that breeders have done their share in complying with these demands. However, it was also pointed out that producers exert an influence on the quality and character of the cotton shipped to the mill, while the ginner also in 10 minutes can exert further influence on cotton quality that may preserve or nullify the breeder's effort.

All people engaged in cotton handling were urged to fully comprehend the influence, good or bad, they may have on cotton's competitive position.

New ACS Lecture Series. A new series, "The Chemistry and Application of Dyestuffs," is being held in the auditorium of the Central Laboratories of Celanese Corp. of America, Summit, N. J., on 10 successive Tuesday evenings beginning Sept. 30, 1952, at 7:00 p. m. The lectures are under the sponsorship of the North Jersey Section of the American Chemical Society. Lecturers have been chosen from the leaders in their respective fields.

The program includes "Colorimetry," (Sept. 30) by Dr. E. I. Stearns, Calco Chemical Div., American Cyanamid Co.; "Physical-Chemical Aspects of the Adsorption of Dyes by Fibers," (Oct. 7) by Dr. H. J. White Jr., Textile Research Institute; "Chemical Constitution and Color," (Oct. 14) by Dr. L. G. S. Brooker, Eastman Kodak Co.; "The Chemistry of Azo-Dyes," (Oct. 21) by Dr. N. M. Mackenzie, Calco Chemical Div.; "The Chemistry of Phthalocyanine Dyes," (Oct. 28) by Dr. R. L. Brouillard, General Aniline Works; "The Chemistry and Application of Vat Dyes," (Nov. 4) by Dr. M. R. Stevinson, General Aniline Works; "The Chemistry and Application of Pigments in Textile Decorating," (Nov. 11) by Dr. Z. W. Wicks, Interchemical Corp.; "The Dyeing of Newer Fibers," (Nov. 18) by Dr. A. L. Peiker, Calco Chemical Div.; "The Chemistry and Application of Fabric Finishes," (Nov. 25) by A. C. Nuessle, Rohm & Haas Co.; and "Consumer Demands and Fastness Requirements," (Dec. 2) by C. W. Dorn, J. C. Penney Co.

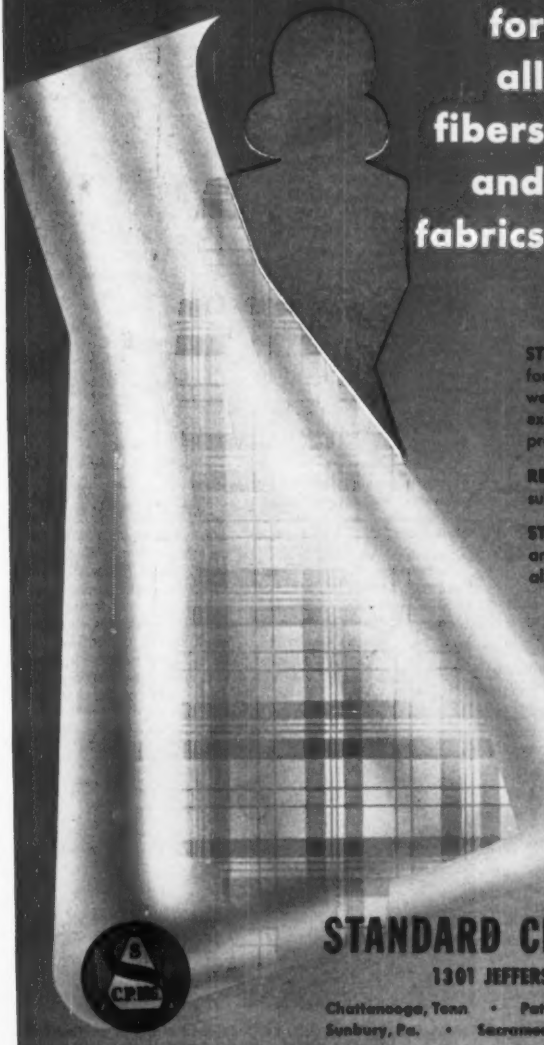
Carpets of Man-Made Fibers. There was a remarkable jump in the output of carpets containing man-made fibers, Merrill A. Watson, president of the Carpet Institute, said at the end of summer in an analysis of the production of woven floorcoverings for the first half of 1952.

For the year 1951, 26.6% of the floorcoverings produced were woven from combinations of wool and carpet acetate or rayon. Figures for the first half of '52 showed that this amount had risen to 40.3% of all woven floorcoverings. All this has taken place in two years' time. Continuous development and research in this direction will insure greater stability in raw material prices. Moreover, it will mean an improved and more diversified line of soft floorcoverings at lower cost to consumers.

(*Continued on page 328*)

Standard's quality products

for all fibers and fabrics



PYROTEX — For scouring and dyeing Wool, Worsted, Cotton, Acetate, Rayon and Nylon. Neutral, effective under acid, alkaline and hard water conditions.

STANTEOSINE — Substantive softener for Acetate, Rayon, Cotton, Worsted, Wool. Minimum effect on shade and light fastness of dyed fabrics. Anti-static properties.

STANDAPINS* — Durable and semi-durable finishes imparting a full range of body, hand and drape to all fabrics; non-slip finishes; snag-resistant finish for hosiery; ribbon finish.

STANDAPOLS* — Quality sulfonated oils for finishing, softening, throwing, sizing and emulsifying anti-static agents.

STANTEX* OILS FOR YARNS AND STAPLE — Suitable for all fibers in coning, winding, twisting, spinning, weaving, knitting, etc. Characterized by high lubricity, excellent stability and scourability and good anti-static properties.

RETARDINE* — For level dyeing and stripping of vat, sulfur and direct colors.

STANTEX* PENETRATORS — For fast, efficient wetting and surface reducing action in dyeing and finishing of all yarns and fabrics.

SANFOROLS — For efficient wetting and rewetting and softening properties in preshrinking processes. No gumming of shoes or odor development.

SOLIDINA — For improving fastness to washing and crocking of direct colors.

MOYTOL — Penetrant for dyeing, fulling, carbonizing, mercerizing, finishing and sizing. Effective in acid, alkaline and salt solutions.

*Reg. U. S. Pat. Off.

STANDARD CHEMICAL PRODUCTS, Inc.

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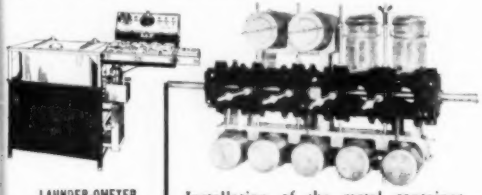
Speed up your Launder-Ometer to 10 TIMES its present testing rate with . . .

Atlas Metal Containers

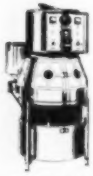
Give the same color loss test in 1/10 the time required for standard tests in glass jars.

The accelerated action of the steel containers is due to the shape and size of these metal cylinders which are 3½" diameter and 8" long and when mounted on the adaptors in the Launder-Ometer produce a speeded up action that obtains the same results as the standard glass jars in only 1/10th the time.



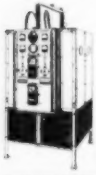
LAUNDER-OMETER

Installation of the metal container adaptors is simple and easy. You do not need to convert all of your containers to metal cylinders unless desired. Adaptors are available for two, or five metal containers. Twenty samples can be tested simultaneously using metal containers, glass jars, or combinations of both.



FADE-OMETER

With this simple adaptor you can transform your present Launder-Ometer into a high speed machine that will produce color loss equivalent to 5 commercial launderings in just 45 minutes. This is the new AATCC washfastness test.



WEATHER-OMETER

Write for special bulletin giving full information on metal cylinder conversion and Accelerated Washfastness tests.

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NEWS ABOUT *Suppliers*

Equipment Suppliers

Atkinson, Haserick & Co., Boston, Mass., has announced that Platt Bros. (Sales) Ltd. has been licensed to supply the Casablancas System of high drafting in the U. S. on its latest roving and spinning frames.

Borg-Warner Corp., Chicago, Ill., has announced the appointment of W. B. Johnson as sales promotion manager.

The Bullard Clark Co., Danielson, Conn., has appointed John W. Normington service engineer for the territory of Connecticut, Rhode Island and western Massachusetts.

The Durkee-Atwood Co., Minneapolis, Minn., has announced the appointment of James E. Williams as the Southeastern district representative of its Industrial Div. with headquarters in Atlanta, Ga.

The Foxboro Co., Foxboro, Mass., has named John Deaderick manager of its Philadelphia office, serving the industrial sections of eastern Pennsylvania and southern New Jersey.

Industrial Dryer Corp., Stamford, Conn. has acquired U. S. Patent No. 2,606,372, "Apparatus for Conditioning Material," issued August 12, 1952, to H. B. Foulder and George Millspaugh, assignors to the corporation.

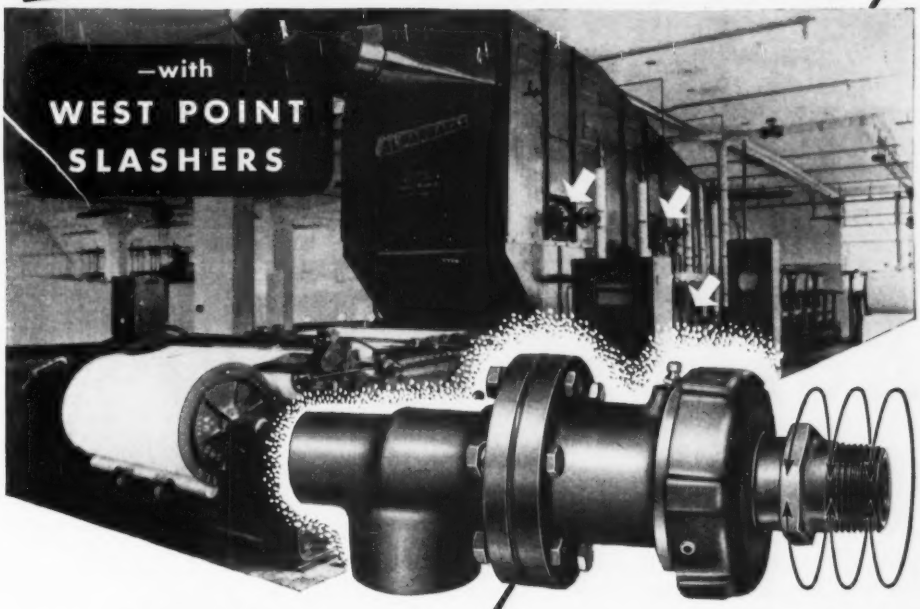
WHITING N. SHEPARD has been made director of sales of Boston Woven Hose & Rubber Co., Cambridge, Mass.

Manning, Maxwell & Moore, Inc., Stratford, Conn., has named Ian K. MacGregor director of manufacturing of the Consolidated Ashcroft Hancock Div.

The W. D. Dodenhoff Co., Greenville, S. C., has announced plans for the development and manufacture of new ring spinning frames and twisters for cotton and synthetic fibers. Also included in the program is the conversion of present spinning frames to improved long-draft systems, and modification of standard narrow-gauge twisters, a service that is already available. The development of the new frame,

THOMAS G. PATTON (left) has been made president of Hunt Loom & Machine Works. **T. HENRY WOOD** (right) is now vice president and sales manager of the Greenville, S. C., firm.

OUTSTANDING PERFORMANCE



...equipped with

BARCO *Revolving* JOINTS

QUICK FACTS:

1. **Trouble-free Performance! Thanks to long lasting "CTR" V-Type Seal Rings—a Barco Development.**
2. **Free-Floating, Low Torque installations. Cuts Power Costs up to 50%.**
3. **Unexcelled Ability to withstand Vibration and Hard Usage.**
4. **Better Temperature Control where steam is used for heating rolls due to better circulation.**
5. **Low Maintenance; No Adjusting. Holds seal running or standing.**

The name "West Point" stands for carefully engineered designs and faultless performance in textile mill slashers everywhere. With West Point, as with other leading manufacturers, one key factor in performance is the selection of revolving joints.

To provide *trouble-free* rotating connections for steam supply and condensate drainage, West Point Slashers are regularly equipped with Barco Revolving Joints—*as indicated in the above installation.*

Let us send you complete information about Barco's new *improved* Type IBR Revolving Joints for Textile Machine Dryers, Slashers, Dry Cans, Sanforizers. *Catalog 300 on request.*

BARCO *Manufacturing Co.*

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Exsize-T gives you the same safe, sure action time after time. That's why so many of the leading textile finishers use Exsize-T exclusively!

This liquid enzyme concentrate is both efficient and economical.

Write for free booklet.

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News About **SUPPLIERS** (Continued)

ANTHONY J. SWISLER (left) has been made regional manager for the West Coast area for Whitney Chain Co., Hartford, Conn. GEORGE A. BANTON (right) is district manager for Southern California and Arizona.

to be known as the Dodenhoff MF-1 "UNIDRAFT" is now under way, and it is anticipated that the frame will be completed around the first of the year. Textile Equipment Corp., machinery manufacturing and sales subsidiary of the W. D. Dodenhoff Co., is undertaking the development, manufacture, and sales of this new equipment. Their engineering and manufacturing facilities, presently engaged in the manufacture of special opening and blending machinery, are now being expanded to meet the needs of this new program. W. B. Martin, formerly of H & B American Machine Co., Pawtucket, R. I., will direct the program.

Reading Testing Laboratories, Reading, Pa., has annouced that the laboratories will be represented in Canada, New England, the Midwest and Western states by Hosiery Mill Accessories, Inc.

Steel Heddle Mfg. Co., Greenville, S. C., has added James C. Jacobs and Richard B. Stevens to its Sales Dept. Mr. Jacobs will work out of the Atlanta, Ga., plant, and Mr. Stevens out of Greensboro, N. C.

Saco-Lowell Shops, Boston, Mass., has announced that James L. Truslow, vice president, has been named executive assistant to the president. Elmer J. McVey and J. Arnold Kiely were elected vice presidents. Douglas H. Sears was elected to succeed Mr. Kiely as comptroller.

Springfield Boiler Co., Springfield, Ill., has appointed Homer J. Hansen, Atlanta, Ga., as sales representative.

Textile Machine Works, Reading, Pa., will build an assembly plant in Almelo, The Netherlands. Warren Dresher will be manager.

WAYNE LEWISON (left) is moving to the Hopedale, Mass., office of Draper Corp. as manager of the bobbin division. SAM HALL (right) has been made manager of the Beebe River plant.

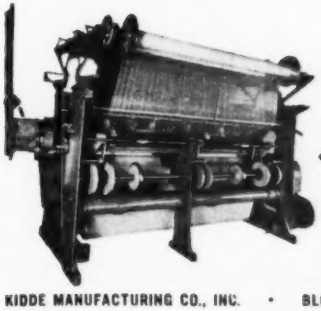
Are you making NET for party dresses?

Consider the High Production Rates Available with the Kidde Knitter

Anything from a 15 denier nylon bridal veiling—sheer as a cobweb—to a rugged laundry bag net can be produced at new high speeds on the Kidde Knitter. Speeds varying from 200 to 280 courses per minute—depending on pattern and yarn—are being maintained in mills using this machine.

That's a substantially higher rate of production than has ever been attained on this type of machine before—but it's *typical* of the high, *sustained* speeds possible with the *Kidde* Knitter. A new drum drive, a new motion on needle bars make these speeds possible—and the machine is designed throughout to withstand them.

You'll find the *Kidde* Knitter adaptable to practically any type of yarn, thread or elastic—quickly and easily set up for simple or intricate patterns.



Use the *Kidde* Knitter on these fabrics too

Elastic Fabrics for corsets, girdles, brassieres. *Dress Fabrics. Dish Cloth Materials. Curtains. Narrow Fabrics:* edgings, braidings, laces. *Shoe Cloth. Knitted Outerwear Fabrics* for sweaters, polo shirts.

The word "Kidde" is the trade-mark of Walter Kidde & Company, Inc., and its affiliated Companies.

Kidde Knitter

KIDDE MANUFACTURING CO., INC. • BLOOMFIELD, NEW JERSEY

how to prevent lead sulphide stains on viscose fiber

... Versene* (REGULAR)

LEAD SULPHIDE SOLUBLE IN VERSENE*

Sulfuric acid, stored in lead, forms lead sulfate which usually deposits on the Viscose fiber as it is coagulated. If this lead is not removed, subsequent desulfurizing precipitates it as the black sulfide. This results in a grey-stained yarn. A Versene rinse can remove the lead at any time — if equipment for a recycled wash is available in the processing line.

VERSENE* MAKES VISCOSE WHITE

Lead compounds, including Lead Sulfide, are soluble in weakly acidic Versene solution. For maximum efficiency, the Versene should be used as a rinse after the acid-coagulating bath and before desulfurizing. The pH of the Versene should be approximately 5.5. Versene cannot be added to the acid-coagulating bath because the lead chelate (complex) of Versene will not be formed in strongly acid solutions. When properly used, Versene assures a *white* yarn.

VERSENE* — WHAT IT IS

Versene (regular) is one of a family of powerful organic complexing agents for the exacting chemical control of cations in solution. Known as ethylene diamine tetra acetic acid sodium salts, it has the ability to form soluble non-ionic chelates with polyvalent metallic ions. It permanently changes the character of these ions in solution. Amazingly stable at all temperatures and pH's, Versene is manufactured to highest specifications. Its uniform quality guarantees uniform results. Write Dept. D. Send for Technical Bulletin No. 2. Ask for sample.

NEW VERSENE WATER TEST KIT. Tells total hardness in two minutes. Accurate to one grain per gallon. Versenate Method. Complete Kit $5.00 Postpaid.

"INDUSTRY'S MOST MODERN CHEMICALS" *Trade Mark

BERSWORTH CHEMICAL CO.
FRAMINGHAM, MASSACHUSETTS
Warehouse Stocks

Providence, R. I. — George Mann • New York (Brooklyn) — Siegel Chemical Co. Chicago — Kraft Chemical Co. • St. Louis, New Orleans, Dallas, Houston — Berardo & Page • Charlotte, N. C. — Chas. S. Tanner Co.

News About **SUPPLIERS** (Continued)

Chemical and Yarn Suppliers

American Viscose Corp., Philadelphia, Pa., has appointed B. Brooke Bright to head its technical and professional recruiting division.

Aquex Development & Sales Corp., Whippany, N. J., has started a plant expansion program that will more than double its present output of textile finishing resins. Both manufacturing and research laboratory areas are being enlarged.

Arnold, Hoffman & Co., Inc., Providence, R. I., has completed a series of major expansion moves at its Harkness & Cowing Div., Cincinnati, Ohio. Among the equipment additions is a new molecular still. A completely new esterification unit has also been installed.

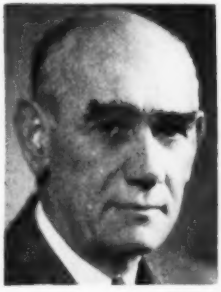
Caldwell Chemical Co., Inc., New York, N. Y., has elected George L. Brown vice president in charge of manufacturing. This position will be in addition to his duties as head of its Midwest operations, with offices in Detroit, Mich.

Celanese Corp. of America, Rock Hill, S. C., has promoted Harmon Howorth to a new position of greater responsibility in the recently formed Textile Div. He is moving to the New York offices. Alexander Rose, formerly assistant plant manager at Rock Hill, succeeds Mr. Howorth as plant manager. The Chemical Div. has opened a new branch office in Charlotte, N. C., and has appointed William Milheim sales representative for the Southeastern district.

CLEVELAND ADAMS, former technical director of Lanett Mill, has been chosen to head the School of Textile Technology at Alabama Polytechnic Institute, Auburn, Ala. His appointment emphasizes development of a comprehensive program at the school.

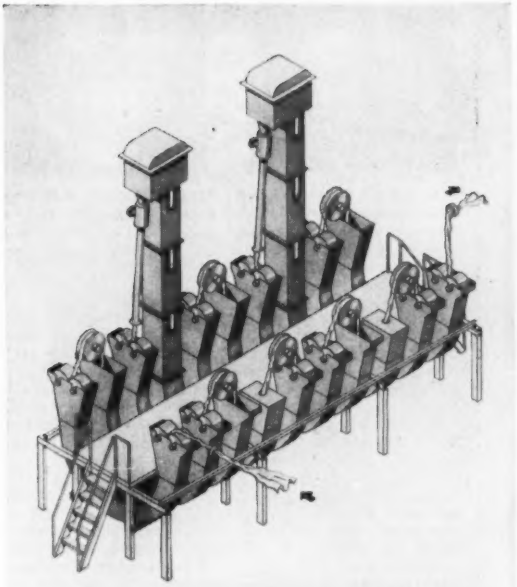
The Chemstrand Corp., Decatur, Ala., has announced seven appointments to the research and development staff at Decatur. They are: Drs. Carlyle J. Stehman, William T. Dye, Jr., and Arthur B. Beindorff; and Messrs. James W. Stoops, Howard A. Chamberlin, Garnett L. Wade, Jr., and Daniel Lavaine Worth.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has moved the main West Coast office of its Dyes and Chemicals Div. and Rubber Chemicals Div. to 845 E. 60th St., Los Angeles, Calif., with



DAVID F. EDWARDS (left) has been elected chairman of the board of directors of Saco-Lowell Shops. MALCOLM D. SHAFFNER (right) succeeds him as president.

NOW! A NEW CONTINUOUS BLEACHING SYSTEM AT A NEW LOW COST!



DU PONT CONTINUOUS PEROXIDE BLEACHING SYSTEM TYPE 1000

Capacity . . . . . 750 to 1500 lbs./hr.
Speed . . . . . to 100 yards/minute

NOTE: The equipment illustrated above, which can be used in the Type 1000 System, is designed and sold by H. W. Butterworth & Sons Co., Bethayres, Pa. Other manufacturers also supply equipment for this system.

The Du Pont Type 1000 Continuous Bleaching System is an all-new peroxide bleaching system based upon time-proven bleaching principles. Designed specifically for plants processing from 750 to 1500 lbs. of cloth per hour on a full-production or specialty basis, the new system employs a compact two-stage bleaching range which is basically simple in design and construction . . . can be installed and operated at a surprisingly low cost. Here are the benefits the new system can bring to your bleaching operations:

NEW ECONOMY . . . Bleaching equipment is priced so low that it can usually pay for itself within two years through reduced operating cost and increased production.

NEW CAPACITY . . . With a capacity of 750-1500 lbs. of cloth/hr., the Type 1000 System meets the requirements of large mills for specialty work . . . is adequate for total production in many smaller mills. Cloth speed is up to 100 yds. /minute. Goods in the 3-7 yds./lb. class can be handled.

NEW EFFICIENCY . . . The new system produces maximum yardage at lowest possible cost. Chemical and steam consumption are lowered by as much as 40%. One-man operation means exceptional savings in labor costs.

NEW QUALITY . . . Automatic operation permits close control of chemicals, steam and cloth speed. Because the system is continuous, every yard of cloth receives the same bleaching treatment for same length of time—resulting in finished goods of high uniformity and quality.

SEND FOR THIS FREE BOOKLET!

It gives you complete information about the Type 1000 System . . . describes advantages, applications, steps of operation and equipment design. Send in the coupon below for your copy.

DU PONT PEROXIDES
FOR TEXTILE BLEACHING

Available in drums and tank cars { "Albone" 35 . . . Hydrogen Peroxide, 35% / "Albone" 50 . . . Hydrogen Peroxide, 50% }

DU PONT

150th Anniversary

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

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Electrochemicals Department, Wilmington 98, Delaware

Please send me your new free booklet which completely describes the new Du Pont Type 1000 Bleaching System.

*Name*_____ *Position*_____

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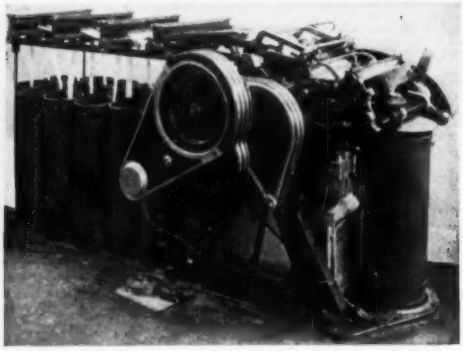
*Street & No.*_____

*City*_____ *State*_____

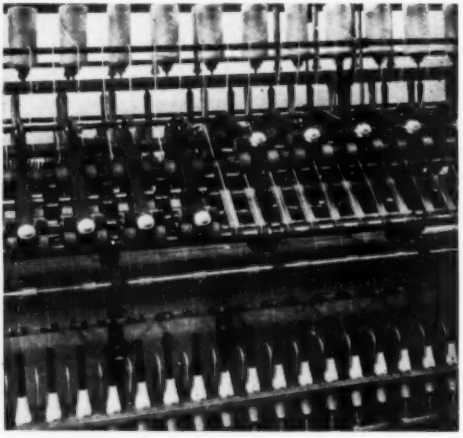
TEXTILE MACHINES S. P. A.

Isotta Fraschini

CONTINENTAL COMBING AND SPINNING MACHINERY FOR WOOL - BLENDS - SYNTHETICS



RECTILINEAR COMB FOR WOOL & SYNTHETICS
with can creel, special sword and coiler



HIGH DRAFT RING SPINNING FRAME, 400 SPINDLES

Features the patented Isotta Fraschini high draft with spring pressure on feed rolls and front rolls. The adjustable pressure permits the processing of twisted and untwisted slivers from any drawing system such as French, American or Bradford. Average draft—15-18

Spindles on roller bearings, 4 spindle tape drive, speeds up to 11,000 r.p.m. Constant balloon, anti-marriage and anti-balloon devices. 2 and 2½" ring. Bobbins 10½"

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News About SUPPLIERS (Continued)

T. C. MORRIS has been elected a vice president of Union Special Machine Co., Chicago, Ill. He continues to head the company's export sales.

TOM R. MOORE has been appointed assistant to the vice president and general sales manager of General Dyestuff Corp., New York, N. Y.

A. J. Mease as manager. Eric J. Monaghan, one of the country's foremost dye experts, retired at the end of August after a 35-yr. career with Du Pont.

Federal Resinous Chemicals, Inc., Brooklyn, N. Y., has been formed. Federal Adhesives Corp., Federal Latex Corp., Resinous Chemical Mfg. Co., and Adex Mfg. Co., jointly announced. The new corporation will specialize in the production of textile processing chemicals such as synthetic resins, detergents, and finishes.

Glass Fibers, Inc., Toledo, Ohio, has elected Thomas A. Collins to the newly created position of executive vice president.

Industrial Rayon Corp., New York, N. Y., announced that Irwin R. Needle has resigned from the Knit Goods Inspection Div., U. S. Naval Supply Activities, to become a service engineer in the company's Knit Cloth Dept. David H. Scholl, vice president and general manager of The Wm. Taylor Son & Co., was elected to the board of directors of Industrial Rayon.

Libbey-Owens-Ford Glass Co., Toledo, Ohio, has named Carl Graeflin to its sales force. Arthur S. White has been named field representative in the Kansas City area.

Phrix, Neumuenster, Germany, will soon introduce its new fiber, "Redon". This is a polyacrilonitrile fiber, similar to Orlon. The fiber will have greater elasticity. The material is said to be resistant to light, acid, and boiling water. Moisture absorption is only 1%.

Pittsburgh Plate Glass Co., Pittsburgh, Pa., has named Robert A. McLaughlin director of sales for the Fiber Glass Div.

Rayonier, Inc., Doctortown, Ga., broke ground recently for its $25 million pulp mill development. The Doctortown plant is the major development in its $80-million expansion program. The new plant will add about 87,000 tons' capacity per year.

Refined Products Corp., Lyndhurst, N. J., named Harold A. Sweet director of its Industrial Div. Mr. Sweet was formerly in the sales and sales development dept. of General Dyestuff Corp.

Reichhold Chemicals, Inc., Charlotte, N. C., is about to market a line of synthetic resins and allied chemicals for the textile industry.

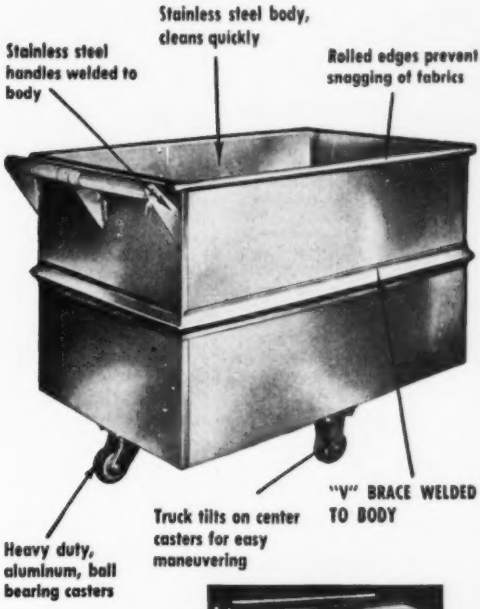
L. Sonneborn Sons, Inc., New York, N. Y., has appointed Jack Turer, formerly head of the Analytical and Textile Service Dept. at Virginia-Carolina Chemical Corp., Fiber Div., to the research staff. He will concentrate on development work relating to the processing of synthetic fibers.

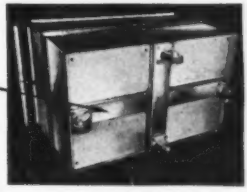
Union Carbide and Carbon Corp., New York, N. Y., has appointed J. W. Ross Philadelphia district manager. He succeeds R. M. Joslin, Jr., who is now manager in Chicago.

New Stainless Steel

WET GOODS TRUCK

- **EASY TO CLEAN**
- **SNAG FREE**
- **RUGGEDLY BUILT**

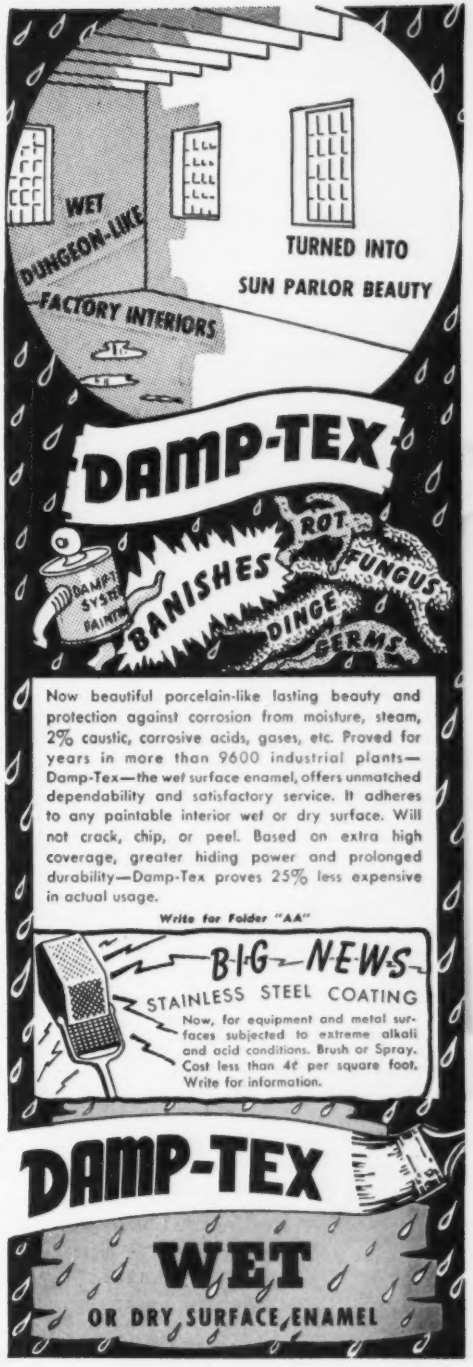

Stainless steel body, cleans quickly
Stainless steel handles welded to body
Rolled edges prevent snagging of fabrics
"V" BRACE WELDED TO BODY
Truck tilts on center casters for easy maneuvering
Heavy duty, aluminum, ball bearing casters



This is the wet goods truck dyers have always wanted . . . built to stand rough handling for years . . . easy to clean . . . snag free . . . a truck designed to cut your handling costs. Standard width 3 feet, depth 30". Standard lengths 3 ft., 4 ft., 5 ft., 6 ft. Also built in sizes to meet your requirements. Send for Bulletin 7032.

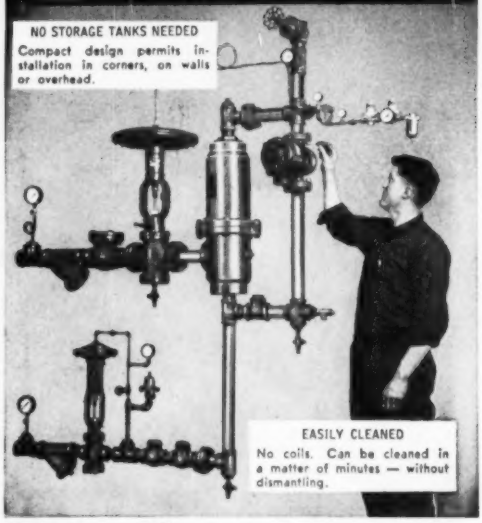
S. BLICKMAN, INC. 410 GREGORY AVE. WEEHAWKEN, N. J.

Blickman Built
STAINLESS STEEL TEXTILE EQUIPMENT
Dye Boxes, Linings, Cylinders, Dry Cans, Hoods, Tanks


WET DUNGEON-LIKE FACTORY INTERIORS
TURNED INTO SUN PARLOR BEAUTY
DAMP-TEX
BANISHES ROT FUNGUS DINGE GERMS
Now beautiful porcelain-like lasting beauty and protection against corrosion from moisture, steam, 2% caustic, corrosive acids, gases, etc. Proved for years in more than 9600 industrial plants—Damp-Tex—the wet surface enamel, offers unmatched dependability and satisfactory service. It adheres to any paintable interior wet or dry surface. Will not crack, chip, or peel. Based on extra high coverage, greater hiding power and prolonged durability—Damp-Tex proves 25% less expensive in actual usage.
Write for Folder "AA"
BIG NEWS
STAINLESS STEEL COATING
Now, for equipment and metal surfaces subjected to extreme alkali and acid conditions. Brush or Spray. Cost less than 4¢ per square foot. Write for information.
DAMP-TEX
WET
OR DRY SURFACE ENAMEL

STEELCOTE MFG. CO., St. Louis 3, Mo.
Canadian Manufacturer
STANDARD PAINT & VARNISH CO., WINDSOR, CANADA
Canadian Industrial Distributor
G. H. WOOD & CO., LTD., TORONTO

TEMPERATURE CONTROL IS ESSENTIAL in BLEACHING and DYEING


NO STORAGE TANKS NEEDED
Compact design permits installation in corners, on walls or overhead.
EASILY CLEANED
No coils. Can be cleaned in a matter of minutes — without dismantling.

Pick INSTANTANEOUS WATER HEATERS *provide*

ACCURATE CONTROL + REQUIRED VOLUME

HEATS WATER INSTANTLY

PICK Heaters are entirely automatic to provide and accurately maintain water temperatures up to 180° F. Water is heated instantly—by steam injection. Exclusive Pressurizer Piston eliminates pipe hammering and shaking. Installation is simple, requiring only ordinary pipe connections. Available in seven sizes with rated capacities of 10 to 200 gallons per minute.

USED BY
Exeter Manufacturing Co.
Kerriglen Finishing Co.
Guyan Mills
Jordan Manufacturing Co.
Pepperell Mfg. Co.
AND MANY OTHERS

Write Dept. TW3 for Details and Specifications

MANUFACTURED BY
PICK MANUFACTURING CO.
WEST BEND, WISCONSIN, U.S.A.

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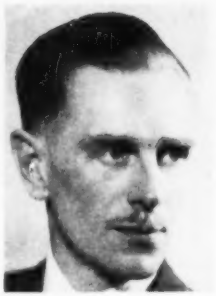
News About SUPPLIERS (Continued)

Other Services

ACMI, New York, N. Y., has announced new committees for the coming year. Charles C. Hertwig, president, Bibb Manufacturing Co., Macon, Ga., heads the Foreign Trade Committee with Gordon Harrower, president, Wauregan Mills, Wauregan, Conn. as vice chairman. Ellison S. McKissick, president, Alice Manufacturing Co., Easley, S. C., continues as head of the Cotton Textile Mobilization Committee. Other committee chairmen are: Audit—F. E. Grier, Abney Mills, Greenwood, S. C.; Budget and Finance—H. K. Hallett, Kendall Mills, Charlotte, N. C.; Cotton—A. K. Winget, American & Efird Mills, Inc., Albemarle, N. C.; Legislation—J. Craig Smith, Avondale Mills, Sylacauga, Ala.; Membership—Russell B. Newton, Dan River Mills Danville, Va.; National Cotton Council—W. S. Montgomery, Spartan Mills, Spartanburg, S. C.; Research—Walter Regnery, Joanna Cotton Mills Co., Joanna, S. C.; Statistics—Halbert M. Jones, Waverly Mills, Inc., Laurinburg, N. C.; Tax—C. W. Kable, Jr., Deering Milliken & Company, New York, N. Y.; Technical Service—Harold W. Whitcomb, Fieldcrest Mills, Spray, N. C.; Traffic—A. B. Edge, Jr., Callaway Mills Co., LaGrange, Ga.; Worth Street Rules—Hearne Swink, Cannon Mills Co., Kannapolis, N. C. Edward M. Fuller, Greenwood Mills, New York, N. Y., will represent ACMI on the General Arbitration Council of the Textile Industry. A. K. Winget of the American & Efird Mills, Inc. of Albemarle, N. C., will continue as ACMI representative on the Southeastern Appeal Board. ACMI representatives on the Textile Industry Committee on Foreign Trade are J. W. Barnett, Cannon Mills, Inc., New York, N. Y.; Edward M. Goldberger, M. Lowenstein & Sons, Inc., New York, N. Y.; Marion W. Heiss, Cone Mills Corp., Greensboro, N. C.; and Frank H. Hillery, Wellington Sears Co., Inc., New York, N. Y.



J. A. NASMITH has been elected chairman of the Council of the Textile Institute in Britain. He is executive manager of Universal Winding Co., Manchester, England.

Dilts Machine Works, Fulton, N. Y., has a complete coating laboratory available for pilot plant-scale trial purposes. The laboratory facilities have been made available to fabric and plastic converters for a wide range of coating materials. The service is designed to aid coaters who lack facilities.

W. R. PEACOCK has joined the sales staff of Sonoco Products Co., Hartsville, S. C. He will work out of Birmingham, Ala.

V. WELLBORN COOK has joined American Monorail Co. as a sales engineer. He will work out of the Charlotte, N. C., office.

Good News for Textile Shippers

OPERATION TEXTILE

National Carloading's complete fast transportation service to the West Coast from Northern and Southern mills...

NEW 4 new National Carloading stations in the South—at Winston-Salem, N. C., Charlotte, N. C., Greenville, S. C., and Chattanooga, Tenn. (in addition to Atlanta, Birmingham, and Memphis) to serve Southern Shippers of textiles.

Northern shippers have long used our expedited service to the West Coast. NOW...with establishment of four new stations in the South... important additions to our nation-wide network of facilities, National Carloading gives you complete service for textile shipments from points east of the Mississippi to the Pacific Coast.

SOUTHERN TEXTILE SHIPPERS!

Save time, cut freight costs by shipping your textiles, fabrics, yarns, and finished products via National Carloading to the West Coast. Call, wire, or write National Carloading in Atlanta, Birmingham, Memphis, Charlotte, Winston-Salem, Greenville, or Chattanooga. It's far and away "the Best Way" to ship textiles cross-country!

NORTHERN TEXTILE SHIPPERS!

Take advantage of our Operation Textile for fast movement, expert handling of textiles to or from the West Coast. Stations throughout New England, and Trunk Line and Central Freight Association Territories, to give you on-the-spot personalized attention. Call us on your next shipment!

WEST COAST MANUFACTURERS, SALES AGENTS, RETAILERS!

When ordering textiles from points East of the Mississippi, specify: "SHIP VIA NATIONAL CARLOADING!" It's your assurance of receiving fast shipping service and low freight costs on your purchases. Also, when you ship to the East, enjoy the same kind of expedited service by shipping via National. Stations throughout the Pacific Coast area... at your command for textile shipments.

A SHIPPING SERVICE CUSTOM MADE FOR TEXTILE SHIPPERS

- low freight rates
- fast service
- direct through cars
- regular schedules
- expert handling
- daily forwarding reports
- advance information on arrivals
- stations throughout textile areas

"The Best Way"

NATIONAL

Contact your nearest National Carloading station...

National Carloading Corporation

Judson-Sheldon Division
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Headquarters: 19 Rector Street, New York 6

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INDUSTRIAL SEWING MACHINES

are Chainstitch and Overlock Machines of world-wide reputation, designed for latest requirements.

The MAUSER Program includes:

- Overlock Machines
- Single Chainstitch Machines
- Double Chainstitch Machines
- Elastic inserting Machines
- Overseaming Machines
- Ornamental Seam Machines
- Bag Sewing Machines
- Cylinder Machines
- Double Feller Feed-off-the-arm Machines
- Flatlock Feed-off-the-arm Machines
- Ribbon Cutting Machines

Please inquire for special leaflets.

MAUSER SPEZIAL M IWK

INDUSTRIE-WERKE KARLSRUHE
AKTIENGESELLSCHAFT KARLSRUHE, GERMANY

People work better when they

In the Durham Hosiery Mills

Examining fabric for defects—one of the many "close-inspection" jobs that Magni-Focuser makes easier.

SEE BETTER

IN leading textile plants, Magni-Focuser—the binocular magnifier—reduces eye strain and prevents squinting—thereby speeding production, increasing accuracy and minimizing the chance of errors and accidents. Especially valuable in working on 60 gauge, 15 denier yarn. Restores the usefulness of the skilled hands of many older workers whose vision needs a seeing aid.

Prismatic lenses assure optical accuracy. Normal vision resumed by slightly lifting head. Used with or without eye-glasses. Order now for 10-day trial. Return if not satisfied. $10.50. Send for folder.

MAGNI-FOCUSER helps Menders Fixers, Mechanics Knitters, Inspectors

Leaves both hands free to work

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For Maintained Shrinkage—Perfect Finish—Long Life

HUYCK COMPRESSIVE SHRINKAGE BLANKETS

for use in shrinking fabrics to the *"Sanforized"* standard by the compressive shrinking process, are daily meeting the most exacting requirements of finishers throughout the industry. From the lightest and finest fabric to the heaviest denim, there is a special Huyck blanket to meet your specific needs.

Huyck blankets retain high shrinkage and finish properties to the last.

PALMER BLANKETS—also available for your special requirements.

Write for information or see our representative

KENWOOD TEXTILE PRODUCTS

F.C. HUYCK & SONS

Kenwood Mills · Rensselaer, N.Y.

NEWS ABOUT Mills

Cotton Mills

Alabama Mills unit at Fayette, Ala., has begun a program that will increase its capacity by one-third. An addition is being built to house twisters and other special machinery to produce plied and specialty yarns.

Allied Fabrics, Inc., Dallas, Tex., has moved from 1402 N. Peak to larger quarters at 163 Parkhouse in the Trinity Industrial District.

Apex Textile Co., Putnam, Conn., is reported planning to rebuild its mill that was recently damaged by fire. The loss was about $50,000, including building, equipment, and stock.

Buffalo Weaving & Belting Co., Buffalo, N. Y., has been granted a building permit to enlarge its plant at a cost of $55,000.

Cosmos Imperial Mills Ltd., Yarmouth, N. S., has installed Pneumafil equipment on eight spinning frames. Pneumafil equipment will be installed on 47 additional frames.

C. R. Daniels, Inc., has a modernization program under way at its recently acquired mill at Weldon, N. C. New equipment is being installed.

Fulton Bag & Cotton Mills, Atlanta, Ga., has started construction of a 76,000-sq.-ft. building that will house the company's new finishing plant.

Herman Funke & Sons, Ashley, Pa., manufacturers of embroideries and laces, will enlarge its production facilities by 50%.

Hartsville Mfg. Co., Hartsville, S. C., will break ground soon for a plant addition that will provide jobs for about 100 more workers.

Lonsdale Co., Providence, R. I., has changed its name to Berkeley Co., Inc.

Pepperell Mfg. Co. will construct a new sheet factory at Abbeville, Ala. The mill will be adapted to sewing operations so that the plant at Pepperell, Ala., can be devoted solely to finishing operations. The building will contain 63,000 sq. ft. Robert & Co. Associates is architect-engineer.

Riegel Textile Corp., New York, N. Y., has opened two additional warehouses, one in Hawthorne, N. J., and one in Fort Wayne, Ind.

Southland Fabrics, Inc., Newton, N. C., has been incorporated by J. W. Abernethy, Sr., president of Carolina Mills, Inc., and others. Southland will work with Carolina Mills and with Maiden Fabrics Co., Maiden, N. C.

Standard - Coosa - Thatcher Co., Chattanooga, Tenn., has established a new warehouse at 1427 N. Broad St., Philadelphia, Pa., and has moved its local branch office to this location.

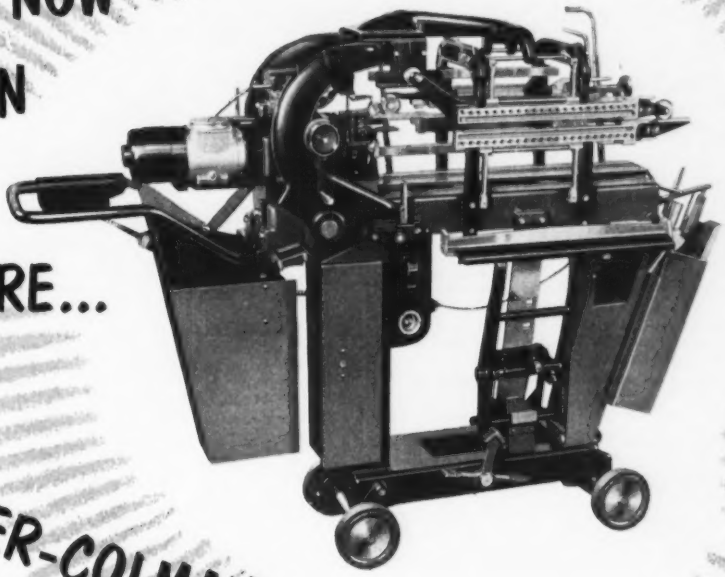
J. P. Stevens & Co., Inc., New York, N. Y., has awarded a general contract in excess of $100,000 for the construction of a storage warehouse adjacent to the firm's trucking terminal in Greensboro, N. C.

Swift Mfg. Co., Columbus, Ga., is building a $50,000 addition. The addition will be used as a waste house and will allow the company to expand its dyeing department.

Trenton Cotton Mills, Gastonia, N. C.—Stock control in this company has been sold by A. M. Dixon, president, and Kay Dixon, treasurer, to J. W. Abernethy, of Newton, N. C., and A. Alex Shuford, Jr., of Hickory, N. C.

West Point Mfg Co., West Point, Ga., is investing over $1,800,000 in plant and equipment, including additions to the Langdale and Shawmut divisions and Lanett Bleachery & Dye Works.

BOTH NOW AND IN THE FUTURE...



BARBER-COLMAN PORTABLE WARP TYING MACHINES WILL BE VALUABLE

...and here is why:

Barber-Colman Company has been well acquainted with the needs of the textile industry now for over half a century. The outstanding performance of Barber-Colman machines is well recognized. Barber-Colman branch offices provide close personal contact in the principal mill areas. Barber-Colman repair parts and maintenance service has made a name for itself that insures maximum life and operating efficiency for all Barber-Colman machines. The Company is steadily expanding its manufacturing plant, establishing the organization ever more firmly for continued superior performance of its products, and continued top-notch service, far into the future. Thus Barber-Colman offers you the certainty of continuing high value.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

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BARNES SERVICE
Consulting Engineers
TO THE TEXTILE INDUSTRY FOR OVER ½ CENTURY

We are pleased to announce the expansion of our consulting services to embrace:

PRODUCTION and INVENTORY PLANNING and CONTROL
SALES ANALYSIS and FORECASTING
SALES PLANNING and PROGRAMMING
SALES and OFFICE STANDARD PRACTICE INSTRUCTIONS
ORGANIZATION ANALYSIS PERSONNEL APPRAISAL

These services will be under the direction of Mr. Peter M. Fekula now affiliated with Barnes Textile Associates, Inc. They will complement our established consulting activities in the fields of general engineering, industrial engineering, cost and quality control, materials handling and industrial relations.

Mr. Fekula has had broad experience in a variety of industries in both consulting and operating capacities. Recently he completed an outstanding project for a well-known textile company which brought about close coordination of production and sales. He has been able to apply to textiles many of the principles which have proved so successful in the automotive and aircraft industries.

We will be pleased to give further information about the services rendered by our new Peter M. Fekula Division, as well as by our other departments.

Surveys—Reorganizations—New Plant Developments for Cotton, Wool, and Synthetic Yarn and Cloth Processing Bleaching, Dyeing, Printing and Finishing.

★ Plant Appraisals ★ Mechanical and Operating Surveys—New Methods ★ Scheduling and Planning ★ Work Load Studies, Job Analysis and Evaluation, with Incentive Plans ★ Standard Cost Installations ★ Cost Control Methods
Labormeter Burden-meter Waste-meter
Member: Association of Consulting Management Engineers, Inc.

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522 FIFTH AVE., NEW YORK 18, N. Y.
920-922 MONTGOMERY BLDG., SPARTANBURG, S. C.
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Largest Stock!

It's all happened in less than 25 years! Remember the "old" PRECISION Compound? The first Chain Drives? —for Drawing, Roving, Sliver and Ribbon Lap, for spinning and twisting, etc., etc.? And do you remember that PRECISION ORIGINATED The First —and practically EVERY CHAIN DRIVE used in the Textile Industry? Thus, when you order from PRECISION, you get CHAIN DRIVES by Experts—from the ORIGINATORS! Call PRECISION—the Pioneer and Producer of Textile's most complete line of Chain Drives—most of them in stock. Or, ask for a Sales-Engineer!

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Chain Drives Give You
—longer life • highest efficiency • full output • more uniform product • uninterrupted service • shock load capacity, true economy—first and last.

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THE SOUTH'S LARGEST MANUFACTURER OF GEARS AND CHAIN DRIVES

News About **MILLS** (Continued)

Woolen and Worsted Mills

Collins & Aikman Corp., Bristol, R. I., has a $450,000 modernization program under way in Plant J. Oil-burning boilers are to be installed, and machinery will be moved in to complete a fine-goods finishing department within the plant.

F. C. Huyck & Sons, Rensselaer, N. Y., has shifted its entire blanket manufacturing operation to its new plant at Cavendish, Vt. The firm will continue the manufacture of papermaker felts at its Rensselaer plant.

A. & M. Karagheusian, Inc., Freehold, N. J., has acquired the former plant of Albany Mfg. Co., Albany, Ga., and will remodel and improve for a new branch mill to produce cotton rugs. Plans are under way for a new one-story addition.

Lebanon Woolen Mills Corp., and **Lebandale Mills**, Lebanon, N. H., plan an expansion program starting with the building of a new warehouse. **Northfield Mills**, Northfield, N. H., has lately spent $100,000 on new equipment. These three mills are owned by Benjamin Goldfine.

Mahoney Wool Co., Inc., Lawrence, Mass., has leased space in the former mill of William Whitman Co., Inc., Arlington Div., from Marriner Co., Inc. Patrick J. Mahoney is president of the firm.

Porritts & Spencer (Canada) Ltd., Hamilton, Ont., plans a one-story, 60x180-ft. addition to its plant. Heating will be by low-pressure steam. William R. Souter & Associates, Hamilton, Ont., is the architect. H. H. Angus & Associates Ltd., Toronto, is the engineer.

Princeton Worsted Mills, Trenton, N. J., has decided to add 6,000 sq. ft. of floor space to the building now under construction at Kingstree, S. C. The new plant will be known as the Kingstree Div. of Princeton Worsted Mills.

Schlegel Mfg. Co., Rochester, N. Y., is checking Southern sites for relocation of its plant, which manufactures interior trim for automobiles.

Alexander Smith, Inc., Yonkers, N. Y., will realign its production facilities for greater efficiency and economy of operations. The project is expected to take about 2 yr.

Zelta Corp., New York, N. Y., has established manufacturing and warehousing facilities in Gastonia, N. C., for its hand-knitting yarns.

Synthetics Mills

Bruck Mills Ltd., Sherbrooke, Que., opened its new $1,300,000 spinning division recently. The new plant consists of a one-story windowless brick structure, 403x142 ft. It adjoins the weaving division and is integrated with it. The entire building is air conditioned.

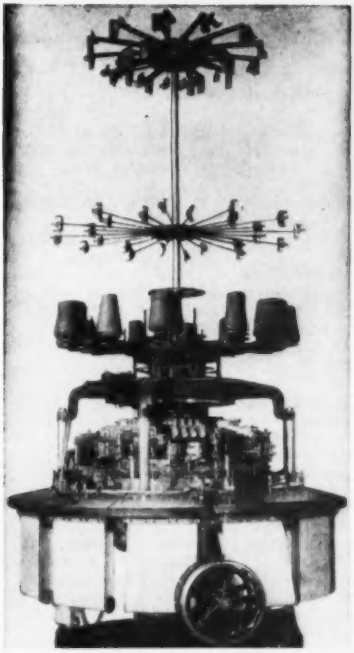
Capital Nylon Co., Mechanicsburg, Pa., headed by A. W. Magagna of Wilkes-Barre, is improving its building on North York St. and installing machinery. Wm. J. Smith of Kingston is superintendent.

Joan Fabrics Corp., Hickory, N. C., has acquired the plant of the former Hickory Fabrics Co. and will make tapestry fabrics of rayon and cotton. Erle E. Herzog is vice president in charge of the mill's production.

Fieldcrest Mills, Spray, N. C., recently reopened its woolen mill building, which has been altered for weaving filament synthetics. The windows have been bricked up, and air conditioning and new lighting have been installed. Equipment from the former rayon mill has been transferred to a remodeled building.

Robbins Mills, Inc., Red Springs Div., Robbins, N. C., recently achieved a safety record of 6,000,000 manhours without a disabling accident. The employees are now trying to reach the world's record for a textile rayon mill of 6,292,821 injury-free manhours.

Sheble & Wood Yarn Corp., synthetics division, Salamanca, N. Y., recently completed a $250,000 modernization program.



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JACQUARD KNITTING MACHINES

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ELECTRIC STOP-MOTIONS

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STANDARD THE WORLD OVER

"WESCO" Electric Stop-motions are known for the company they keep with justly famous manufacturers of knitting machines.

Greater production, versatility, simplicity of operation are features of "Wesco" as they are features of the machines they serve. When you purchase new machines—Specify "Wesco" Electric Stop-motions.

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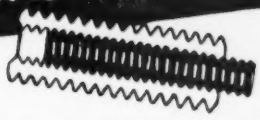
Another of a Series of Knitting Machine Builders, Others to follow

New Huffman Holder Licks Picker Problems!



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This shows how snugly the new Huffman interlocking metal holder bonds picker and picker stick. A simple turn of the socket wrench gives any desired adjustment. Cannot move or slip after adjustment.

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Actual unretouched photos at right show damage caused to picker sticks and pickers by the old method of attaching and adjusting with common wood screws.

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FAST, SIMPLE, FOOLPROOF

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Does not require mechanic to place back in operation. Any operator can have head back in position in less than thirty seconds.

Will also improve quality of lap. Rollers have ball bearings which eliminate friction, preventing stretched laps. No pin shearing device.

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1718 Third Ave., Columbus, Ga., U. S. A.

News About **MILLS** (Continued)

Knitting Mills

Adams-Millis Corp. is overhauling its machinery and replacing 45-gauge full-fashioned machines with new 60 gauge. The plant is installing new lighting and other equipment.

Cherokee Hosiery Mill, Centre, Ala., recently reopened. Claude Hardeman is serving as manager. Glover Johnson is president of the firm.

Chestertown Mills, Inc., Chestertown, Md., has established a new tricot plant housed in a building leased from Glenn L. Martin. A. C. Werner is president. The mill will eventually operate 12 tricot knitting machines. Two machines have already been put into operation. The equipment cost about $250,000.

Danita Hosiery Corp. has leased a modern one-story building at 200 Chapel St., Newark, Del., from Avon Products, Inc., New York, N. Y.

Denton Sleeping Garment Mills, Inc., Centreville, Mich., has been purchased by a syndicate headed by Joseph G. Hirsch, head of Rutledge Mfg. Co., New York, N. Y. Carlyle B. Powell, president of Denton, will remain in that office. Denton's line of knitted apparel will be expanded under new ownership.

Erie Street Hosiery Mill, Victoria, Ont., which was destroyed by fire recently, is being rebuilt.

Escambia Mills, Atmore, Ala., operated by Vanity Fair, Inc., has expanded facilities in a building formerly occupied by Vanterial Corp.

E-Z Mills, Inc., has completed the movement of knitting and other machinery from its Bennington, Vt., plant to its Cartersville, Ga., plant, which will become the company headquarters.

Federal Knitting Mills, Philadelphia, Pa., is installing the last of four new 60-gauge, long-section machines that will be worked on three shifts.

Halgood Hosiery Mill, owned by Roy Good and John Hallman, has moved from Longview, N. C., to the basement of Cape Hickory Hosiery Mill in Hickory, N. C.

P. H. Hanes Knitting Co., Winston-Salem, N. C., has awarded a contract to Dillon Supply Co., Raleigh, N. C., to install piping and other mechanical facilities in the boiler plant for Mills No. 3 and 4. J. N. Pease & Co., Charlotte, N. C., is the engineer.

Hardy Hosiery Mills, Pulaski, Tenn., has begun production with one full-fashioned knitting machine. Seven others are soon to be installed in a new building to be erected by the City of Pulaski.

Hudson Knitting Mills, Union City, N. J., has been incorporated by a group headed by G. J. Kauper, 576 St. Paul's Ave., Cliffside Park, N. J.

Line-Made Hosiery Mills, Hickory, N. C., recently incorporated, plans to expand by placing rebuilt knitting machines in a Taylorsville, N. C., building that has been leased from Luke Hafer.

Lucky Circle Hosiery Co., Philadelphia, Pa., will move from 519 Market St. to a new five-story structure at 9 North Fifth St.

Modern Hosiery Mending Co., Philadelphia, Pa., has doubled its capacity for servicing hosiery mills by adding 12 new Vitos mending machines.

Oneita Knitting Mills, Andrews, S. C., has received bids for its new 121x198-ft., one-story mill building to replace a smaller plant that it now rents. The new building will have refrigerated air-conditioning. Biberstein, Bowles & Meacham, Charlotte, N. C., is the architect-engineer.

Pan American Textiles, Inc., has contracted with the Puerto Rico Industrial Development Co. to construct a 29,000-sq.-ft. plant in Puerto Rico with an option to purchase. The new firm will manufacture women's hosiery.

Pasolds (Canada) Ltd., a recently formed subsidiary of

GENERAL LATEX

Announces the opening of a new

LATEX COMPOUNDING PLANT

at

DALTON, GEORGIA

This plant, in the heart of the cotton rug district, is equipped with every modern facility for latex compounding. It can provide rapid delivery of latex, both natural and synthetic. Through its laboratory, and if necessary the facilities of the home laboratory, your needs for special latex compounds to accomplish the most routine, or the most difficult problems in your plant, can be quickly supplied. Our compounds range from foam rubber to dipping, from adhesives to casting compounds, and from rubber thread to rug backing. Many years of know-how stand behind our services to you.

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The pendulum type tester has been the established standard of the Textile Industry for evaluating textile strength, over many years.

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A forward step in the evaluation on an equal basis of fibers, yarns and fabrics, wherein elongation does not influence load.

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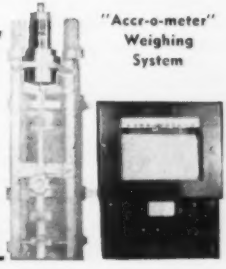
The most recent development for evaluating textile materials, incorporating an electric weighing system free from inertia, accurate beyond belief. Wide versatility for fiber, yarn and fabric testing on a single instrument.



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LITERATURE UPON REQUEST

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The chemical with so many uses, Tennessee Liquid Sulphur Dioxide is now available in Cylinders, Ton Drums, Truck Tanks and Tank Cars. The Tennessee Corporation, producers of highest quality Sulphur Dioxide, is located in the textile producing area, assuring closer contact, faster and more efficient service.

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Start with
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"the no-prep vinyl primer"

- minimizes surface preparation
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TYGON "Series TP" PAINT
"the vinyl finish of maximum protection"

- easily applied by brush or spray
- fast drying and non-oxiding
- fully flexible and chip-resistant
- non-flammable when dry
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360 C

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News About MILLS (Continued)

the English firm of Pasolds Ltd., Langley, Bucks, has resumed construction of its plant in Dorion, Que., following a delay due to a shortage of materials. As now planned, the plant will be one-story, of brick and concrete-block construction, 196x153 ft. Machinery to manufacture Interlock T-shirts, underwear, pajamas, etc., will be installed.

Portage Hosiery Co., Portage, Wis., has let a contract to Gunderson Construction Co., Portage, for a two-story addition, 75x106 ft. Construction is now under way.

Prestige, Inc., New York, N. Y., plans to spend $500,000 for new 66-gauge knitting equipment, including 10 32-section machines. The new machinery will be placed in all four of its mills. One machine has already been installed in the mill at Ephrata, Pa.

Robert Hosiery Mills and **S. & R. Textiles, Inc.**, Philadelphia, Pa., are moving the executive offices to the firm's main plant at 106 W. Seventh Ave., Trappe, Pa., which has been undergoing an expansion and modernization program that cost about $150,000. Four 51-gauge 30-section Reading full-fashioned machines have been installed, and 60-gauge machines will be added in the near future.

Rugby Ring Hosiery Mills, Philadelphia, Pa., has changed its name to Aston Mills and moved its plant to Lenni, Pa.

Scott Knitting Co. Ltd., Toronto, Ont., is a new firm recently organized under a charter obtained from the Ontario Government. The company has a total capital of $40,000.

Sheer Silk Hosiery Mills Ltd., Sherbrooke, Que., has awarded a contract to build a modern branch plant, 150x65 ft., in Sussex, N. S. Twenty-seven full-fashioned machines of 51 and 60 gauge will be installed. The general contractor is MacPherson & Myles Construction Co. Ltd., Nashwaaksis, N. B. The cost of the building is estimated at $135,000.

Tennessee Rock Hosiery Mill, Manchester, Tenn., will begin operation at an early date in a new building that will be constructed by the Manchester Lumber Co.

Waldensian Hosiery Mills & **A. F. Garrou & Sons**, both located in Valdese, N. C., will open branch plants in Cuba, P. R. Both companies will occupy the same building. Waldensian's branch will be known as Walden Hosiery Mills of Puerto Rico, Inc., and will manufacture infant's 70-gauge hose. Garrou will operate under the name of Garrou, Inc., and will use 66-gauge full-fashioned machines.

Zonana Hosiery Mills, Houston, Texas, is starting production of men's hosiery. Henry Zonana is the head of the company. Twenty-four wrap machines were bought from Morris Speizman, Inc., Charlotte, N. C.

Dyeing and Finishing Plants

Aspinook Corp. has contracted for the sale of its finishing and printing plants and business at Jewett City, Conn., and Adams, Mass., to William Whitman Co., Inc., Boston. If the sale is approved by Aspinook's stockholders, Whitman will continue Aspinook's business without change in present policies and relations with customers.

Cone Mills Corp., Greensboro, N. C., has been issued a building permit for a warehouse to be built at the Greensboro Print Works. It will be five stories high and will cover 75,000 sq. ft.

Electric Plastic Fabrics, Inc., Pulaski, Va., has been granted a $100,000 defense production loan by the Reconstruction Finance Corp. Of this sum, $70,000 is to be used as working capital and the balance for the purchase of machinery and equipment.

Mount Hope Finishing Co., Inc., Butner, N. C., plans to increase by 50% its present rate of almost 1,000,000 yd. of synthetic fabrics.

United States Finishing Co., Norwich, Conn., reports plans for an expansion of its plant in Hartsville, S. C.

Supervisors Value more than *Doubled*
—at *NO EXTRA* Cost—
With Proper Constant *USE of "TENSION-RITE" DEVICES*

OPERATOR TESTING SHUTTLE TENSION

1. Get Highest *Quality, Efficiency* and Increased *Work-loads.*
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3. *Reduce* Costs by Using *Higher* Speeds and *Larger* Size bobbins.
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(PATENTED)

Shown here: 3-cylinder set, with Peralta Machine. Also available in 2-cylinder and 4-cylinder sets.

All foreign matter entangled in the web as it passes from the doffer is pulverized by the two Peralta Rolls, thereby eliminating this foreign matter from the stock.

BUILT in two sizes, 78¾" and 72¾", this well-known woolen carding machine offers substantially greater production and noticeably improved quality because of inherent design features and operating advantages.

A new 2-cylinder carpet card now in operation in the Duesberg-Bosson Woolen Spinning Co., Jefferson, Mass., is causing great interest.

CATALOG AVAILABLE ON REQUEST

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Manufacturers of Woolen Machinery, Developed from a Background of Over 115 Years

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A few drops of ***TASGON*** will cut rust fast. ***TASGON*** quickly loosens rust-frozen nuts and bolts, couplings, joints, etc. . . . cuts through gummed-up oil and grease.

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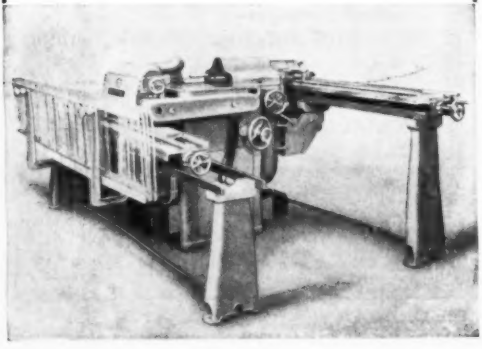
WESTGERMANY

Modern Automatic
Pumicing and Brushing Machines
for the Upkeep of Weaving Reeds



NEWS ABOUT Men

A. Allwood has become manager of the Textile Div. of Keasbey & Mattison Co., Meredith, N. H.

J. Anderson has been named vice president and assistant general manager in charge of manufacturing at Caldwell Linen Mills Ltd., Iroquois, Ont.

Fred Andrews has become overseer of dyeing at Chateau Dyers Ltd., Huntingdon, Que., succeeding **F. Broadhead**, resigned.

Dan Bendig has become overseer of drawing at Walter Marshall Spinning Co., Chester, Pa. **John Williams**, formerly with Globe Mills of American Woolen Co., Utica, N. Y., has become overseer of spinning and twisting at the Walter Marshall plant.

Bertram H. Bloch, planning coordinator for Burlington Mills at Greensboro, N. C., has been transferred to New York to head the spun-fabric planning activities.

Tom Boyd, former chemist with Mooresville Mills, Mooresville, N. C., has become head chemist in the dyehouse laboratory of Valdese Mfg. Co., Valdese, N. C. He succeeds **Dr. Julian Hershfield**, who recently resigned to go with the chemical department of Dan River Mills, Danville, Va.

William J. Bradfield has retired as weave-room overseer at the Riverdale Mill of West Point Mfg. Co., West Point, Ga.

Stanley W. Burlingame, overseer of winding, warping, and twisting for Crown Mfg. Co., Attleboro, Mass., and Woonsocket, R. I., has resigned. **Joseph Walsh**, night superintendent; **Samuel Salemi**, overseer of the cloth room; and **Edgar Guay**, personnel and employment manager, have also resigned.

Charles H. Burns has joined Fulton Bag & Cotton Mills, Atlanta, Ga., as controller.

J. H. Burns has become overseer of mending for Guild-Northland Mills, Inc., Laconia, N. H., succeeding **H. Roy**.

Frank H. Bussiere, general manager of Northfield Mills, Northfield, N. H., has been named general manager also of Lebanon Woolen Mills Corp., and Lebandale Mills, both in Lebanon, N. H. **Bernard J. Casey** has been named superintendent of the three mills. He succeeds **Donald McMahon** who has joined Jefferson Woolen Mill, Knoxville, Tenn.

William M. Campbell, Jr., has been named sales manager of Lockport Felt Co., Lockport, N. Y. He has been a director of the company since 1946.

Ian M. Casson has been named warehouse manager of Plymouth Cordage Co. Ltd., Fort William, Ont.

Arthur Charlesworth has become coordinator of production control at Abbot Worsted Co., Graniteville, Mass.

Thomas A. Collins has been elected executive vice president of Glass Fibers, Inc., Toledo, Ohio.

William J. Coward has resigned as card-room overseer at Dyersburg Cotton Products, Inc., Dyersburg, Tenn. He has been succeeded by **Jack Todd**.

James C. Cox has been appointed general superintendent of the cotton dyehouse of North Carolina Finishing Co., Salisbury, N. C.

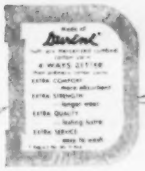
H. Roy Crabtree, vice president and general manager of Woods Mfg. Co., Toronto, Ont., has been elected to the board of directors of Paton Mfg. Co., Montreal, Que.

William J. Cummings has become designer and super-

FOR KNITTING OR WEAVING

Insist on

AMERICAN & EFIRD YARNS



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Combed Peeler or Sak, 10's-100's Ply
Carded Peeler, 8's-30's Single

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These are typical reports from mill superintendents who use the Oakite Steam Gun and powerful Oakite detergents:

- Cuts 3½ hours off Diesel radiator cleaning time.
- Dye vat cleaning costs cut from $25 to less than $10.
- Braiding machine now cleaned in place—time cut from two days to half an hour.

Try Oakite Steam-cleaning on *your* tough jobs. Write Oakite Products, Inc., 42 Rector St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
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MATERIALS • METHODS • SERVICE
Technical Service Representatives in Principal Cities of U.S. and Canada

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AMERICAN BOBBIN CO.
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All Types Shuttle Fur—Muskrat—Opossum—Lambskin

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All Types of Rubber Temple Rolls—Beam Barrels—Shell Rolls—Cloth Rolls—Lap Rolls—Take Up and Sand Roll Covering

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KNITTING MACHINE NEEDLES

MANUFACTURED BY

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STE CROIX—SWITZERLAND

News About **MEN** (Continued)

intendent of Pioneer Mills of American Woolen Co., Pittsfield, Maine.

Ralph E. Curtin, general superintendent of Bates Div., Bates Mfg. Co., Lewiston, Me., has been appointed plant manager of that division. **Robert A. Landry**, overseer of carding at the Hill Div., has been named superintendent of carding, spinning, and slashing at the Bates Div. **William P. Malloy**, assistant to the general superintendent, has been named superintendent of weaving. **Raymond R. Coulombe** is overseer of carding at the Hill Div.

C. V. Davis has resigned as superintendent of jig dyeing at the Alta Vista Finishing Plant of Burlington Mills, Alta Vista, Va.

L. A. Deal, plant manager of Slater Mfg. Co., a unit of J. P. Stevens & Co., has been named head of quality control at the Carter Div., with offices at Greensboro, N. C. He is succeeded at Slater by **Harlan C. Pruitt** of Greensboro.

Kenneth Dorman has been appointed chief chemist at Goodall-Sanford Co., Sanford, Me.

R. J. F. Dunlop has been named assistant treasurer of Belding-Corticelli Ltd., Montreal, Que.

Alfred Durette has resigned as superintendent of Laurel Plastics, Inc., Madison, Me., and has been succeeded by **Thomas B. Sevison.**

Frank Fiore, vice president and general manager of the gray goods division of Textron, Inc., has been named vice president in charge of sales, with headquarters in New York. A new cotton division has been formed under the direction of **C. O. Wood**, formerly sales director of Indian Fabrics.

Charles S. Fowler has joined Pepperell Mfg. Co. as director of research and development. Mr. Fowler recently resigned as merchandise coordinator of the Textile Div. of U. S. Rubber Co.

Ralph W. Freeman has become overseer of dyeing, second shift, at A. C. Dewey Co., Quechee, Vt., succeeding **Fred Andrews.**

C. S. Frost was recently appointed a director of Cosmos Imperial Mills Ltd., Hamilton, Ont.

H. G. Gates has been named general superintendent of Fickett Cotton Mills, Whitehall, Ga. **Hugh W. Teat** was named assistant superintendent.

James Gibbs, overseer of dyeing at the Danvers Bleachery & Dye Works of Naumkeag Steam Cotton Co., Salem, Mass., has been transferred to the company's plant in Whitney, S. C.

Thomas A. Gray has resigned as woolen yarn superintendent at Botany Mills, Passaic, N. J., to become a textile consultant for Robbins Mills, Raeford, N. C.

Cornelius Hamill has become overseer of weaving at Yantic Woolen Co., Yantic, Conn.

Leon Head has been appointed superintendent of the sewing room at the Grace Bleachery of Springs Cotton Mills, Grace, S. C. **D. R. Ponton, Jr.**, will be his assistant.

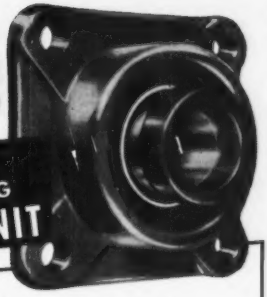
Edgar L. Henderson, Jr., chief accountant of West Point Mfg. Co., West Point, Ga., has been elected secretary. He succeeds **Edward C. Hunt**, of Boston, who recently resigned. Mr. Henderson was also elected secretary of the three subsidiaries of West Point: Dixie Mills, Inc., LaGrange, Ga.; Columbus Mfg. Co., Columbus, Ga.; and Equinox Mill, Anderson, S. C.

F. Guy Henley, vice president and general manager of W. B. Davis Hosiery Mill, Inc., Fort Payne, Ala., has retired. **Walter D. Fay**, executive vice president, will take over purchasing duties formerly under the direction of Mr. Henley.

C. V. Hill has been named superintendent of Textron Southern's newly acquired Peerless Mill at Belton, S. C. He was formerly assistant superintendent of the firm's Hartwell, Ga., plant.

Henrik Hoffer has become head of the night shift at the

Wood's



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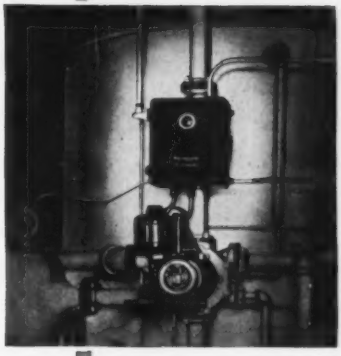

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News About **MEN** (Continued)

newly established plant of Clinton Hosiery Co., New Hamburg, Ont.

Martin H. Horchler has resigned from Deering, Milliken & Co. as head of the worsted and synthetic-yarn sales department.

Frank Jenkins is now twister-room overseer at the plant of American Thread Co., Tallapoosa, Ga.

Bill Johnson, former general overseer at the Oxford, N. C., plant of Burlington Mills, has been promoted to assistant superintendent, and Taylor Sparrow, former shift overseer, is now general overseer.

J. Arvid Jonsson has been named director of personnel administration for Alexander Smith, Inc., Yonkers, N. Y.

Norman F. Keffer has been named fabric stylist for the synthetic-fabrics division of Reeves Bros., Inc., New York, N. Y.

John S. Kenrick, vice president in charge of sales development, has been named a director of Aberfoyle Mfg. Co., Philadelphia, Pa. Mr. Kenrick succeeds the late **Charles A. Turner.**

G. Walter Kirby has been promoted from departmental supervisor of the Painesville, Ohio, plant of Industrial Rayon Corp. to service engineer in the company's Tire Cord Div., Cleveland, Ohio.

E. R. Lachance has become assistant designer for Hathaway Mills, New Bedford, Mass.

William Galey Lord, who went with Burlington Mills Corp., New York, in 1947 when that firm acquired Galey & Lord, has been elected a vice president of Burlington. He will continue to manage the Galey & Lord Div.

Wallace E. Lovely, of Rochester, N. H., has accepted a position as overseer of weaving, winding, and dressing with Gonic Mfg. Co., Gonic, N. H.

Andrew W. Macy, vice president and treasurer of Nashawena Mills, New Bedford, Mass., has been appointed resident manager of the Nashawena Div. of William Whitman Co., under the company's new reorganization plan.

Harold Mason has succeeded **H. L. Pruitt**, retired, as general manager of Havnsworth Mills, Anderson, S. C.

George McCarthy, superintendent of the Seneca, S. C., plant of Utica & Mohawk Cotton Mills, a division of J. P. Stevens & Co., has been appointed general manager of the division. He succeeds **Howard O. Chapman**, who has retired. **Frank W. Walsh**, superintendent of the Clemson, S. C., gray goods mill, succeeds Mr. McCarthy as superintendent of the Seneca Plant. **W. H. Burton**, assistant superintendent in charge of carding and spinning at Appleton Co. Div., Anderson, S. C., succeeds Mr. Walsh.

James McDonough recently retired as foreman of Kenwood Mills Ltd., Arnprior, Ont.

Wellington S. McMann has been named assistant manager of the quality control department of Dan River Mills, Danville, Va. **Robert W. Willett** now heads the mill's control laboratories.

E. C. Millard has become overseer of carding at Huntingdon Woolen Co., Huntingdon, Que.

Allen L. Mills, Jr., has been elected president and a director of Paoli Cotton Mills, Statesville, N. C., to succeed his father.

John B. Moran has become superintendent of dyeing for Bachmann Uxbridge Worsted Corp., Uxbridge, Mass., succeeding **F. Snowling**, retired.

Charles W. Mulcahey has been named to the board of Borden Mills, Inc., Kingsport, Tenn.

John R. Mullikin has been appointed personnel manager for the Apalache, Greer, and Victor plants of J. P. Stevens & Co. at Greer, S. C., and for the Monaghan plant at Greenville. He also continues as personnel manager for Piedmont Mfg. Co. and Jonesville Mills. **James L. Hill**, employment manager of the Victor plant, has been transferred to the Monaghan plant as employment manager, a new posi-

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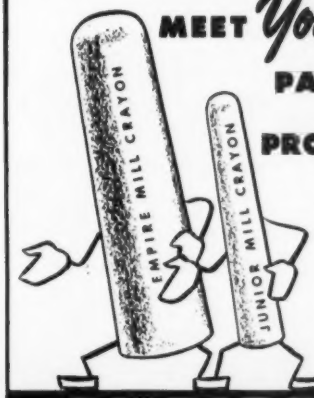

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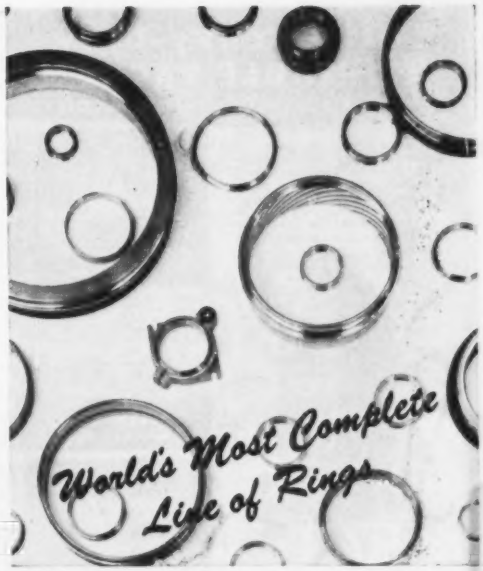

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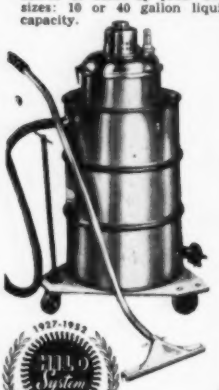

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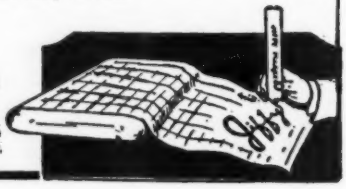

News About **MEN**

(Continued)

tion. **Fred Snody**, athletic director for Victor plant at Greer, has been named employment manager.

William Park has become superintendent of William Park & Sons, Inc., Stafford, Conn.

Robert Patterson has been elected vice president and a director of Holly Knit, Inc., Mount Holly, N. C., in addition to his duties as general manager. He replaces **Milton Hinkis**, whose resignation as vice president and sales manager became effective recently.

J. Arthur Phillips has been named general superintendent at the Williamston Rayon Mill, Peerless Mill, and the new plant at Honea Path, S. C.

William H. Pinnell has become associated with Iselin-Jefferson, Inc., New York, N. Y. He was formerly with Ely & Walker Dry Goods Co.

A. Keith Pooser, who has been resident engineer for J. E. Sirrine Co., will become engineer for American Thread Company's new finishing plant at Sevier, S. C. **Merrill D. Davis**, who has been plant engineer of the Bristol, Tenn., plant, will be assistant plant engineer at Sevier. **George Brown**, formerly of Bristol, will be chief electrician in the maintenance department of the new plant.

H. L. Pruitt, general manager of Havnsworth Mill, Anderson, S. C., has retired.

Kenneth A. Purdy has become overseer of weaving at Seymour Woolen Mills, Seymour, Ind.

M. P. Rainville has resigned as overseer of the finishing department at Peerless Woolen Mills, Rossville, Ga. His successor has not been named as yet.

Robert Ross has been named manager of the men's-shirting department of Burlington Mills Corp., New York, N. Y.

Alex. S. Russel has been elected a director of Monarch Knitting Co Ltd., Toronto, Ont. He is divisional manager of the spinning division of Monarch Knitting Co. Ltd.

Walter Saturday is now assistant superintendent of the American Thread Co., plant at Tallapoosa, Ga. He was formerly twister-room overseer.

Raymond Schuster, superintendent of dyeing and finishing at the Pacific Mills, Brookneal, Va., plant has resigned. He is succeeded by **Oswald T. Beck**, formerly of Whitman's Arlington Mills.

James N. Scott, former assistant vice president of Minneapolis Knitting Works, has joined Straus Knitting Mills, St. Paul, Minn., as production manager.

R. M. Scronce, who has been with Crescent Spinning Co., Belmont, N. C., for some years, was appointed superintendent of the plant. He succeeds the late **Wade P. Stowe.**

C. M. Scruton, resident manager of Utica Knitting Co. Mill No. 9, Anniston, Ala., has been appointed production manager of all of Utica's mills. He will make his headquarters in Utica, N. Y. **William R. Norton**, assistant superintendent, has been named superintendent of Mill No. 9.

Allan Shore has been elected associate vice president of Robbins Mills, Inc., New York, N. Y. Mr. Shore is manager of the industrial fabrics division of the company.

Herbert Stadtlander is the new sales executive in charge of the New York office of Kenyon Piece Dye Works, Inc., Providence, R. I. He will work with **Fred Seiferheld**, sales manager and head of the service and quality-control departments of the Kenyon plant.

W. A. Stevens has become overseer of weaving at Lincoln Mills Co., Pascoag, R. I., succeeding **H. Thayer Peters.**

Robert B. Steere, New York, has been appointed consultant in charge of fabric development for Putnam Mills Corp., Putnam, Conn.

Richard N. Stone and **Seymour Seidman** have been elected vice presidents of Wamsutta Mills, New Bedford, Mass. **Harold V. Banks** was elected assistant treasurer to fill the post formerly held by Mr. Stone.

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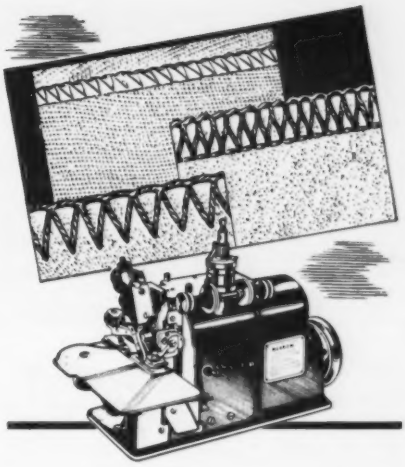

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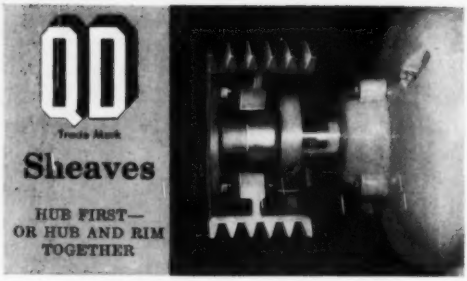

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News About MEN

(Continued)

Ernest L. Taylor, formerly overseer of weaving at Putnam Worsted Mills, Inc., Putnam, Conn., has become overseer of weaving at the Aldrich Mfg. Co., Charlton City, Mass.

John Thompson has become superintendent of Oxford Looms, Inc., Oxford, Mass. He was formerly with Winthrop Mills, Winthrop, Me.

John W. Vanderwerff has been promoted from manager of taxes and audits to assistant controller at Dan River Mills, Danville, Va.; **B. A. Gosney, Jr.,** has been promoted from head of the cost accounting department to accounting director; and **E. C. Moon,** from head of the cost estimating department to cost and budget director.

Frank E. Vayo has become overseer of weaving for Baxter Woolen Co., Inc., Somersworth, N. H.

Herbert Waddell has been appointed overseer of weaving on the night shift at Abney Mills, Woodruff, S. C. **Boyce Rice,** loomfixer, has also been promoted to night overseer of weaving, and **Richard Hendricks,** of the standards department, has been promoted to night card room overseer.

James J. Wallace, formerly with American Woolen Co., has joined the sales staff of Collins & Aikman Corp., New York, N. Y. He will work with **Morris Einstein,** manager of the men's-wear worsted-fabrics division.

Frank W. Walsh has been named superintendent of the Clemson, S. C., plant of Utica & Mohawk Cotton Mills Div., J. P. Stevens & Co., Inc. He succeeds **Winder Gary,** who has resigned. **P. W. Nipper** succeeds Mr. Walsh as superintendent of Jonesville Mills Div.

Walter W. Weismann, chairman of the board of Aetna Industrial Corp., New York, N. Y., has been elected president of Globe Knitting Works, Grand Rapids, Mich. Aetna Industrial Corp., solely owned by Mr. Weismann, recently purchased Globe.

N. P. Wood has been appointed secretary of Spool Cotton Co., New York, N. Y., succeeding **John Bell,** who has retired.

OBITUARY

A. B. Abbiati, 47, vice president of Monsanto Chemical Co. and general manager of the company's Plastic Div. in Springfield, Mass.

George F. Bahan, 72, sales manager of the Bahan Textile Machinery Co., Greenville, S. C.

Isidore Engelson, 58, head of Peter Pan Textile Mills, Inc., Paterson, N. J.

Clarence S. Foster, president and owner of Dallas Hosiery Mills, Dallas, Ga.

Hazel P. Hardin, vice president of Triangle Hosiery Co., High Point, N. C.

Clyde Hayes, plant manager of Meltzer Textile Corp., Hackensack, N. J.

Ernest M. Henning, 66, general manager of the knitting department of Wiscassett Mills Co., Albemarle, N. C.

G. H. Jones, 74, president of the Jones Mfg. Co., Humboldt, Tenn.

George R. Kay, 55, division superintendent of Cherokee Textile Mills, Knoxville, Tenn.

Samuel Kridel, 84, former president of Bethlehem Silk Co., Bethlehem, Pa.

W. D. N. Ouzts, 59, secretary of Riegel Textile Corp., Ware Shoals, S. C.

S. B. Platt, superintendent and designer for Southern Worsted Mills, Inc., Greenville, S. C.

Joseph Seyer, 71, president of Seyer Silk Finishing Co., Paterson, N. J.

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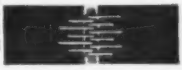

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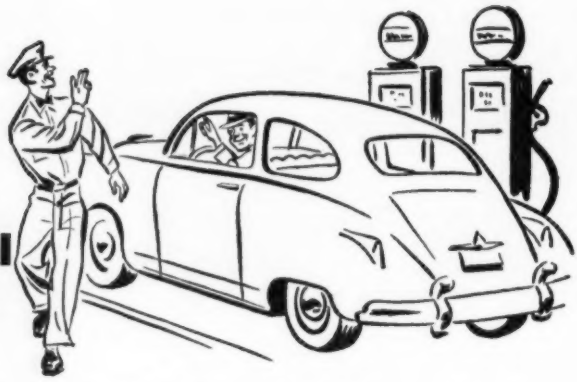


Nobody knows for sure how it started—this line about "See you at the Polls!" we're hearing all over these days.

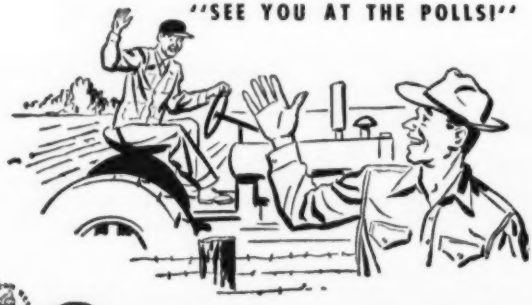
Best explanation seems to be that it came from that state candidate out west. . . . His opponent in a debate got all riled up and challenged him to fight it out in the alley.

But he said—"I'll settle this the AMERICAN way—I'll see you at the polls!" And the audience picked up the chant.

Now everybody's saying it—and on Nov. 4 everybody will be *doing* it!

"SEE YOU AT THE POLLS!"

"SEE YOU AT THE POLLS!"



TEXTILE WORLD

WANTED

Recent graduate of textile college with a few years' experience in rayon spinning on cotton-type system, preferably mill experience, with particular reference to picking and carding. In first instance position consists of running quality control tests in large new rayon staple fiber plant near Mobile, Alabama, including contacts with customers. It is anticipated that the scope of this position may be considerably widened in the future, and it offers the opportunity of growing with an internationally known concern.

Send full particulars to:

COURTAULDS (Alabama) INC.

600 Fifth Avenue **New York 20, N. Y.**

Replies will be treated in strictest confidence

EXECUTIVE
WANTED

Large manufacturer requires man of executive calibre, thoroughly experienced on braiders and conversant with jacquard machines and designing.

Charles P. Raymond Service, Inc.
294 Washington Street, Boston 8, Massachusetts
Telephone Number Lib-26547

WANTED
BRANCH PLANT MANAGER

A large Industrial Textile Company is desirous of contacting an aggressive, comparatively young man to manage branch Plant.

Must have substantially sound background in narrow fabric weaving. Good knowledge of cotton and worsted yarns. Executive ability very essential. To have consideration give complete and full details. Strict confidence assured.

P-5454 Textile World
330 W. 42 St., New York 36, N. Y.

WANTED
BOSS CARDER

Top man for 6 sets tapes and rings. Excellent position for capable man.

P-5394, Textile World
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OVERSEER of WEAVING

Northern Mill—must have pile Fabric and Jacquard experience

Send Full qualifications to

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REPLIES (Box No.): Address to office nearest you
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CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

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BOSS SPINNER wanted for mill in midwest. Johnson & Bassett and Davis & Furber mules. Reply to P-5231, Textile World.

NARROW FABRICS Plant Manager. Leading national manufacturer is expanding an integrated operation and has opening for qualified plant manager. Knowledge of cord manufacture helpful but not mandatory. Ability to develop new and improved methods offers excellent opportunity for greater management responsibility. Salary and age open. You can safely investigate by applying for confidential interview to P-5342, Textile World.

TEXTILE FINISHING Chemist. Central research laboratory of large chemical company located in New York area requires man. PhD. Organic, minimum of three years mill experience in textile resin finishing. Must have supervisory ability and proven interest in research and product development. P-4426, Textile World.

WANTED: A good designer on plush fabrics for the upholstery trade. A man who can create new fabrics is essential. Good position and pay for the man who can qualify for this position. When replying, please state age, past experience and where employed. P-5227, Textile World.

WANTED—DRYER capable of turning out top quality in reasonable volume. P-5284, Textile World.

YOUNG TEXTILE School Graduate wanted for production duties in modern Pennsylvania weaving plant. While experience desired condition for employment is ability and ambition. P-5059, Textile World.

DRAFTSMAN DESIGNER on Circular Lace Jacquard Braider. American Fabrics Co., 1069 Connecticut Ave., Bridgeport 2, Conn.

WANTED: MAN experienced in Nylon throwing operation, for supervisory position. Salary commensurate with experience and ability. P-5455, Textile World.

SELLING OPPORTUNITY OFFERED

INVITE ENQUIRIES for samples & firm prices of Coir Mats, Coir Mattings, Coir Morzouks etc. Ours is a firm of 32 years' standing with a monthly production-capacity of 40000 square yards of Matting & 2000 Doz. of Mats. Our Reference: The Chartered Bank of India, Australia & China, Cochin. Krishna & Sons' Coir Mfg. Co., Shertallay, South India.

(Continued on the following page)

MEN WANTED
POSITIONS OPEN

We can place: SUPT. broad loom elastic fabrics; supt. corduroy dye. and fin. $7500-10,000; supt. for face fin. woolen, women's wear fabrics; designers woolens and worsteds; asst. supts. cotton yarn and cloth mills; exec. controller salary $10,000-$12,000 year; Raschel and tricot supts., overseers and fixers; asst. supts. woolen yarn and cloth mills; shoddy supt.; office mgrs. and cost accountants; asst. supt. silk and rayon cloth mills; knit goods designer and fabric man; cotton-rayon goods designers; nar. fab. designer; asst. designers woolens, worsteds and pile fabrics.

OVERSEERS FOR FOLLOWING DEPTS.: package and piece dye.; win. and wstd. fin.; cot.-rayon slash., dress. and warp preparation; win. card. 1st, 2nd and 3rd shifts; rayon-cotton piece goods fin.; rubber covering; wstd. draw., pin drafters; nar. fabric weav.; quilling and entering; sew. and fin. knit goods; jig dye.; wstd. combing; rayon weav. (foreign); corduroy dye.; dye. pile fabrics; top dye.; overseers and fixers rayon wind., twist. and coning mach. Garment dyer or textile schl. grad. to learn garment dye.

SECOND HANDS FOR: woolen card.; woolen spin.; and cot-rayon piece goods dye.

ENGINEERS and draftsmen for electrical, instrument, mechanical, structural, operating, process, piping and project engineering and checkers, top salaries and transportation paid; plant maintenance engineer for firm bldg. tex. machy.; hos. mechanic (foreign); foreman and designer on braiders; chemists, chem. engineers and laboratory man for mills also for demonstrating and selling; chemist for felt mfg. to become asst. supt.; salesmen (several); tex. schl. graduates with or without mill exp.; fixers for Komet, Links and Links and Tompkins machines; fixers nar. fab. looms; quiller tenders and beamer tenders; sew. mach. fixer; warp starter; win. card fixers.

LIST YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the textile mills.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St., Boston 8, Mass.
Telephone Liberty 2-6547
Specialists in Placing and in Supplying Textile Mill Executives

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TEXTILE ENGINEER

For work in the broad field of development of new yarn and fabric structures, utilization of new fibers, and related textile problems.

Requires preferably advanced degree in Engineering or Physics with at least four to five years experience in Textile Research. Excellent opportunity for aggressive and capable qualified person.

Liberal benefits and pleasant working conditions. Please give resume of personal background, education and experience, with salary requirements, in first letter.

Celanese Corporation of America
Central Research Laboratory
Summit, New Jersey

NON-WOVEN FABRICS

A progressive, international manufacturing organization offers another opportunity resulting from research and company expansion in diversified fields. An engineer needed to solve product development problems in the field of non-woven fabrics. Carding and weaving knowledge helpful but not essential. Salary Open. Midwest location.

Minnesota Mining & Manufacturing Co.
900 Fauquier Ave. **St. Paul 6, Minn.**
Manufacturers of —
Scotch Ribbon, Locelon, Decorette.

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Need top flight representation for your textile supply item or specialty in the Carolinas and Virginia? Firm with over 25 years of service to the industry has room for one additional account. *Write*

RA-5221, Textile World
330 W. 42 St., New York 36, N. Y.

WANTED

CARPET MILL

ASSISTANT SUPERINTENDENT

Applicant should have had several years experience in textile mills, preferably in carpet manufacturing; yarn making, dyeing, finishing and weaving of carpets; good administrative ability and knowledge of incentive plans will be helpful.

This is an attractive position with well established successful company in Canada. Starting salary range $6,000-8,000 a year, with bright prospects for future advancement.

Telephone or write in confidence to

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington Street, Boston 8, Mass.
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PLANT MANAGER

For Wool-combing Mill located in the Philadelphia area. A new position is being created because we are expanding our combing department and adding synthetics. We are a large aggressive organization with a national reputation. This position commands a good salary with an excellent future for a man who can assume responsibility and produce results. State full particulars in letter.

P-5466 Textile World
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$15,000

Prominent textile firm seeks A-1 man, thoroly acquainted in dye field on cotton, rayon, worsteds, etc. Your application held in strict confidence.

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Specializing in
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LABORATORIES AT PAWTUCKET, R. I.
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Product Or Business For Diversification

Our client, an established manufacturer in the mid-south, will buy a distinctive specialty product or business selling to textile, paper, cellulose products, chemical or other manufacturers, with market acceptance established.

Please write Department "C" enclosing this ad., Brokers protected.

CHARLES H. WELLING & CO., INC.
52 Vanderbilt Avenue — New York 17, N. Y.
Consultants in Diversification and New Products

(Continued from preceding page)

POSITIONS WANTED

POSITION WANTED as overseer of weaving. Rayon-Nylon-Cotton. 35 years experience on draper looms. Go anywhere. PW-5329, Textile World.

MILL SUPT. Technician or Gen. Supt. Experience silk, rayon, plain Jacquard, upholstery and throwing. Available. PW-5123, Textile World.

RAYON NYLON Throwster. Thoroughly experienced in production and supervision. Modern and practical methods in all phases of throwing. Capable establishing throwing units and training own help in all throwing departments. Married. References. Employed. PW-5144, Textile World.

SELLING OPPORTUNITY WANTED

WANTED MANUFACTURER'S Agent, experienced and well known to add a good account. Georgia, Alabama, and Mississippi territory now covered periodically every 8 weeks, cotton mills only. Commission basis. RA-4929, Textile World.

BUSINESS OPPORTUNITY

A Small Mill wants to contract an organization that will style Men's Wear Worsted Goods and sell the production. BO-5389, Textile World.

FOR SALE
300 Tricot Warp Beams. Perfect condition. Size 14" x 21"

FS-5310, Textile World
330 W. 42 St., New York 36, N. Y.

90—N.E.B. braiders, 16-20-24-36 & 44 carr. #2.
8—N.E.B. braiders #2, for sash cords, 12 & 24 carr.
7—3 or 5 carr. rug brdrs, 4x6" spools.
2—Hask-Dawes 5x7" twisters, 12 gangs ea.
6—24 carrier Warwell braiders, lge sheave.
Textile makes, Soutache, corege & flats.
Please Send List of Your Idle Mchnes.
MICHAEL SOLOMON
131 Spring St., N. Y. C. — REctor 2-9364
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CYLINDERS — TEXTILE PRINTING

Coated with heavy copper shell.
All with 2 in. mandrel either end.
Now engraved with removable three color design.
3 Cyls., 60 in. long x 48 in. diam.
6 Cyls., 60 in. long x 46 in. diam.

FS-5076, Textile World
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One large lot of cast iron, rubber tire, roller bearing wheels, practically new, size 12 x 2½ with 1¼" bore and 2⅝" hub—price $5.32 each.
Also large lot of cast iron, rubber tire, roller bearing wheels, practically new, size 8 x 2 with 1" bore and 2⅛" hub—price $2.85 each.

DIXIE-HOME STORES
P. O. Box 849 — Greenville, S. Carolina

Two bales, 900 lbs., 15 denier, bright nylon, 4½ inch, Tp. 100, second grade, in original packages, Dupont.

FS-5257, Textile World
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TEXTILE MACHINERY

including Carding Machines, Spinners, Automatic Looms, Slashers, S/S Dyers, Extractors, Calenders, Clip & Pin Tenters, Dry Cans, Multi-color Presses.

• Will consider operating or idle plant.

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Church Street Sta., New York 8, N. Y.

WANTED

Continuous - Hydraulic

Sargeant

Automatic Extracting Machines

COMPLETE WITH FEED APRONS
LATE TYPE MODEL

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Dyes — Chemicals — Pigments
Plasticizers — Solvents
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DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
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Established 1919

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Cotton Twine & Jute Twine
Obsolete, Rejects, Odd Lots

Jack Salwen
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WANTED
FLAX TOW FINISHER CARD

Preferably with drawing head.

W-5402, Textile World
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Approx., 2.66 acres of advantageously located ground, on which is erected a modern, excellently constructed factory building of 31,000 sq. ft. Built from plans by Barclay White & Co., by The Ballinger Co.

Note: The location, the size of the lot and the class of factory construction make this a most desirable property.

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48—82" C. & K. W3 Convertible Looms, Serials 12—16393, 24—15447, 12—15074
18 Spindles Whitin Schweiter Automatic Filling Winders, Model MS
2 Foster Model 12 40-Spindle Winders
4 Leeson 10-Spindle Winders, Style 90
1 Brabender Semi-automatic Moisture Tester
150-Compartment Sectional Steel Storage Bins
MACHINE SHOP—Lathe, Shaper, Miller and Drill

YARN STOCK

Approx. 9,000 Lbs. 1/25—64's Reverse Warp Twist, Various Colors
1,000 Lbs. 3/21—64's Cable Twist, Various Colors
3,600 Lbs. 1/20—64's Filling Twist, Various Colors
12,000 Lbs. 2/40—64's Weaving Twist, Natural and Various Colors
2,200 Lbs. 2/20—50's—56's Knitting Twist, Natural and Various Colors

Modern "Art Metal" All-Steel Office Furniture, Bookkeeping Machine, 4 Typewriters, Calculators and Dictaphone Machines.

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PARTIAL LIST OF MACHINERY & SUPPLIES WE HAVE IN OUR WAREHOUSE STOCK FOR IMMEDIATE DELIVERY

120—Draper 64" XD automatic bobbin changing motorized looms, fully equipped, 20 harness dobby, 440 volt motor, practically new.

48—C & K, S-6 56" 2 x 1 automatic bobbin changing motorized looms, 20 harness dobby, 220 volt motor, practically new.

24—C & K, S-5, 56" 2 x 1 looms complete with 220 volt motors.

24—Draper XK 44" motorized looms, 220 volt motor complete with dobbies.

144—Spindles Whitin-Schweiter automatic quill winder complete, new 1947.

1—83" Sipp type DY 8 yard Warper complete, 220 volt motor.

14—Complete units Simco static eliminator 110 volt, 60 cycle, midget power unit with plug-in cord, static bars 55", supporting brackets and necessary high tension cables, insulating supports for guiding cable, ground wire and mazda lamps.

96—C & K, 2 x 1, Super silk automatic bobbin changing motorized looms complete, 220 volt motors.

150—C & K, S-3 automatic shuttle changing 58" motorized looms, 220 volt motors, large shuttle boxes, will take 6-¾" quills, excellent condition, exceptionally good buy.

88—Atwood Monarch type double deck Spinners complete with motors and drives.

32—Atwood double deck Spinners ½ lb. package—200 sp. each.

6—Fletcher 12-fly late type Reelers complete with motor and drive, 550 volt motors.

5 and 7 can Slashers, both silk and cotton system, 60 and 66" complete, equipped with 220 volt motors, will recondition and guarantee.

1 lot of #90 quill winders will recondition to suit your needs.

1 lot of Universal #50 cone winders, will recondition to suit your needs.

Large assortment of 8 yard Sipp, both silk and cotton system warpers.

Several Sipp Eastwood magazine cone creels, late type tensions and electrical knock off.

2 Allen 54" late type Sipp Direct warper, will take a 30" beam head.

Large assortment of C & K, 4 x 4, 56" to 72" motorized looms with large boxes, complete.

Large assortment of stainless steel reeds.

Large assortment of C & K loom parts, KA Rhode Island electrical warp stop motion, drop wires, pick clocks, quills, shuttles, temples, feelers, etc.

1—Proctor & Schwartz Automatic loading, drying & stripping machine for Ladies Hosiery—2 operator, high speed type, Model "D", 1947.
30 leg boards—5 sets toes
Top stripper
V Belt Drive
1½ HP motor

SHAFFER & MAX INC.

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WE OWN AND OFFER FOR IMMEDIATE SALE

118—Saco-Lowell Frames, 252 sp. each. Roth LD., Tape dr. 3" ga., MD., 109 with 2" ring, 9 with 1⅝" ring.

13—Whitin Frames, 272 sp. each. Casablanca LD., Tape dr. 3" ga., 1⅝" ring, MD.

13—Whitin Frames, 252 sp. each. Casablanca LD., Tape dr. 3" ga., 1⅝" ring, MD.

24—Whitin Frames, 252 sp. each. Conventional dr., Tape dr., 1930 model, 3¼" ga., BD.

46—Whitin Frames, 252 sp. each. Conventional dr., Band dr., 3¼" ga., BD.

14—Whitin Frames, 240 spindles each. Conventional dr., Tape dr., 1920 Model, 3" gauge, BD.

14—Prince Smith 2⅝" HERR Ring Spinning Frames, 192 spindles, 3⅜" Pitch 10" Cylinder 1¼" Whorls 2¼" x 8" Bobbins, 7½ H.P. Mtr.—Individual Mtr. —4 B-V Belt Drive.

1—Barber-Colman Spooler, 1949, 306 spindles, 4-count machine, long pockets, quick adjustable snick plates, Weavers Knotter, Travel motor 550 Volts.

Fyans & Israel Machinery Company

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Telephone 5-7431

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WEAVING

1—Nottingham Lace Loom 360" x 6 Pt.
5—Nottingham Lace Looms 360" x 8 Pt.

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1—National Heat Setting Mch. 6-Roll 72 x 10 Yr 1951
1—Burlington S.S. Bail-Off Mch. Yr 1951
1—W & J Padder 2-Rubber Roll 64 x 18 Yr 1951
1—Tenter Frame Unit Includes Stack 110" Dry Cans, Opening, 60' Tenter with W & J Clips, Despatch 40' Housing with Gas Burners Etc. All Rebuilt or new in 1951.
2—Rodney Hunt S.S. 8-comp 10' Slack Loop Washers 1941.
1—R-H ditto Tint & Starch Mch. 1941
1—Infra-Red Drying Unit for Table Cloths. 1948
1—Cocker High Speed Warper, 120" beam, Reeves Control, 1943
1—Cocker 1200 Live End Magazine Creel. Elec Stop Motion.
1—Stack 4—Tinned Dry Cans 23 x 72.

MISCELLANEOUS

1—Westinghouse 100 KW Ignitron Rectifier Unit 220-440/60/3 to 230V D.C. 1948
3—Fairbanks 1000 x 1-Lb Dial Dormant Floor Scales 1947
75—Fibre 4-Wheel Box Trucks 40 x 16 x 23
12—Dreadnaught 4-Wheel Box Trucks 42 x 24 x 24
1—Cleveland Tramrail System (abt 250') 1947
1—Barrett Cravens 500# Portable Elec Stacker 1944
1—Finnell 24" Floor Scrubbing Unit

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SPECIAL OFFER!

ALMOST NEW! CONDITION **18-1948** DOUBLE DECK FLETCHER **TWISTERS**

At A Fraction of Original Cost ! ! ! !

½ lb. package . . . Bobbin equipment with machines!

200 Spindles per machine. Double motor machines — 5 hp - 3 phase 220-440 volts. Machines very sturdily constructed. Suitable for nylon work. Must be seen to be appreciated!

10 12 to 14 OZ. PACKAGE **ATWOOD** 240 Spindle UTILITY **TWISTERS** O. K. FOR NYLON WORK

30 #50 UNIVERSAL - GEAR GAINER - SPLIT EMUL. ROLLS ST. STEEL - "L" DRIVE - ROLLER BAIL PINEAPPLES - **CONERS**

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24 Knowles Box Looms

72" Wide with 1376 Hook Fine
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Double Lift—Single Cylinder
4 x 4 Pick & Pick
Equipped with 1 HP 550 Volt
3 Phase 60 Cycle Motors

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2 Cylinder—Davis & Furber
54" Diameter x 54" Face
With Bramwell Picker Feed
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Whitin Quiller—Model J

304 Spindle
3½" Gauge—10½" Traverse

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25,000 Used Wood Cheeses

8" x 1½"
for 102 Foster Winders

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1—D. & F. all iron Cone Duster
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2—18" x 18" F. & S. Ceiling Condensers
1—"Parkhurst" 48" Burr Picker with Feed
1—Sargent 36" Duplex Burr Picker
1—Schofield 18" x 40" Rag Picker
3—Dodge, Schofield 18" Waste Pickers
1—Card Floor Grinder 60"
2—40" Stock Blowers, B.B.
2—Opening Pickers, 40"
2—Gerry 30" Lumpers

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1—Globe Ball Warper & Creels
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22—Tonner, C. & K., Plush Looms
12—C. & K. W-1 76", 4x1 Looms
4—C. & K. 82" 4x1 automatic Looms
4—C. & K. 82" 4x1 automatic Looms
36—C. & K. 82" (4x4) Box Looms
2—L. & G. Chenille Cutters

WINDING

3—Foster Mod. 75 Cone Winders (like new)
1—Foster, Mod. 101, 100 sp. Cone Winder
4—Foster Mod. 12, Skein to Cone or Tube Winders
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1—Whitin Quiller 2½" Gauge (long chain)
1—Lazenby 15 sp. Cop Winder
3—Sargent 16 sp. Balling Machine, 1948

FINISHING

1—Gessner Mod. 20 Press, 1950
1—Hunter 28B Fulling Mill, 1949
1—Gessner 72"x36" Semi-Decater, 1943
2—Birch Bros. & Tack. Mach. (82")
1—Birch 72" Scutcher & Vacuum
1—Roy 86" Napper Grinder
1—P. & W. 86" 4 cyl. Brush & Sander
2—Teasle Gig's, double cylinder (80")
1—Yorkshire Crab 72"—3 bowl
1—Butterworth 80", 3 bowl Washer
1—S/S Lined 60" Wetting-out Tank with squeeze rools (Pneumatic Pressure)
2—P. & W. 86" Mod. A. Double Shears
2—Voelker 65½" D. B. Presses
1—Set Dry Cans (4) 27" Copper
6—Dry Cans Copper, 70" x 36"
3—72-82" Cloth Inspecting & Rolling Machines
1—Cloth Measuring & Rolling Machine 80"
1—P. & S. 2 Truck Skein Dryer

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Somebody—Somewhere,

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The meeting place of Used Equipment Buyers and Sellers

4—Van Vlaanderan Tenter Frames, 60' x 54", 50' x 60", 50' x 50" and 40' x 60" enclosed gears and Reeves
1—Morrison Jacketed Palmer 68" x 60"
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1—Suction Extractor, 60", pump & Motor
1—V.V. Print Padder, 3 roll, 60"
1—V.V. Net Dryer, 30'x50"
4—V.V. Vertical Tubers 50" & 60" wide
1—V.V. Decatizer, 54" wide, w/blanket
2—V.V. Silk Calenders, 3 rolls, 50"
5—Rice, Barton & Fales Print Machines, 10 colors—58", 8 colors—58", 8 colors—50", 6 colors—45", 4 colors—46", backrigging drives and blanket washers
1—R.B. & F. Hydraulic Mandrel Jack
2—Textile Vat Agers 50" x 30' long
4—Copper Jacketed Kettles, 50 gallon
1—Stainless Steel Rope Washer, 54' long x 14' wide, 58 sections, 30" deep
12—Wooden Dye Becks, 4'-12' wide

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COMPLETE PRINT SHOP AND FINISHING PLANT

OPAL PROCESSING COMPANY

Morrissee & Henry Sts., Haleden, N. J.

1—Open Print Washer, 4 nips, 60"
4—Inspection Tables, 50" wide
1—Philadelphia Loop Dryer 30' x 65" Trucks, Stainless Steel Pails, Machine Shop and Supplies
2—Open Width Greige Washers, 3 compartments 50" and 60" wide
1—Leyland Scutcher, 50" wide
1—Premier Colloid Mill
2—Eppenbach Homo Mixers

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40 WORTH STREET NEW YORK CITY
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1—72" Parks & Woolson Decatizer, Pump & Motor.
1—Butterworth Clip Tenter 40' x 72", Stainless Clips, Reeves & Motor.
1—Hinnekens, 60" Variable Speed Examining & Tubing Machine.
1—Elliott & Hall 54" and 60" Flat Folders.
2—W.J. Tenter Frames, 30" x 54".
1—W.J. Tenter Frame, 30' x 96".
1—3 roll silk or rayon Calender, M.D.
1—42" Self Balancing Extractor, M.D.
2—150 gal. Jacketed Kettles with agitators.
1—Set of 21-72" x 23" Dry Cans Horizontally.
1—72" Hydraulic Padder, M.D.
1—Set of 9—20" x 60" Heavy Steel Dry Cans.
1—50" V. V. Button Breaker.
1—Johnson 7 Can Slasher
1—64" Van Vlaanderen motor driven Tuber.
1—60" Verduin 40 ton Hydraulic Calender.
2—60" motor driven Beamers.
4—Hermas measuring & inspecting machines, tube to tube.
1—60" Measuring, Inspecting & Tubing Machine, tube to tube, new, variable speed, forward, neutral & reverse.
30-60 gallon copper steam jacketed Kettles.
1—Hinnekens Boil-off Machine.
1—Sterling 7½ H. P. Vari-drive.
1—Reeves 7½ H. P. Vari-drive.
About 5,000 S. S. high speed V. V. Clips.
Agitators of various sizes.
Motors of various sizes.
New & Used Electric Hoists.

8—60" Verdiun, Stainless Steel, Motor Driven Jiggs
2-3 ft. 2-8' 1-10' 1-14' Stainless Steel Lined Dye Boxes
New Copper Rollers 16" x 60" wide, W Bore

SHerwood 2-7666 — SHerwood 2-7667
Moe & Blank
DOMESTIC — EXPORT
TEXTILE MACHINERY
523-525 E. 18th ST. — PATERSON 4, N. J.

News of the Month

(*Continued from page 292*)

1952 Cotton Price-Support Rates. The average price-support rate given by the U.S. Department of Agriculture for Middling ⅞-in. upland cotton, gross weight, produced in 1952 is 30.91¢ per pound, which figure is 90% of the parity price of cotton as of Aug. 1, 1952. Last year the average loan rate for Middling ⅞-in. cotton, gross weight, was 30.46¢ per pound. The average rate for Middling 1⅛-in. cotton is 105 points (1.05¢ per pound) above the average rate for Middling ⅞-in. cotton, or 31.96¢ per pound, gross weight.

Price support rates will vary according to location. The rate for Middling 1⅛-in. cotton, gross weight, varies from a high of 32.94¢ per pound in the concentrated mill area of the Carolinas to a low of 31.16¢ per pound in Arizona and California. Location differentials for each warehouse point are based on the freight rate to the mill area of the Carolinas except in eastern Tennessee, Virginia, North Carolina, South Carolina, Georgia, Florida, and Alabama, in which areas a zone system is in effect.

Why Mills Go South (?) A 7¢ wage increase and other gains have been won by the Textile Workers Union of America, CIO, for over 800 workers in nine New York and Philadelphia skein-dyeing shops. The raise was won despite an earlier employer demand for a 10% wage cut and elimination of the insurance program. As it turned out, the union kept the insurance program and even extended health benefits to those laid off up to three months. Also won was a guarantee of eight hours' pay for any day in which four or more hours are worked.

The one-year agreement is subject to approval by the union membership and the Wage Stabilization Board.

Cotton-Standards Squabble. Cotton textile manufacturers have assailed Secretary of Agriculture Brannan's decision to revise government cotton standards downward without first gaining approval of U.S. manufacturers, who use two-thirds of all cotton produced in the country each year. The American Cotton Mfrs. Institute, Charlotte, N. C., has made public a joint request by eight textile associations that Secretary Brannan should delay promulgation of revised standards pending a conference at which representatives of all domestic and foreign groups who buy, sell, or ship cotton could seek mutual approval.

The Secretary ignored the request.

(*Continued on page 330*)

FOR SALE

PARTIAL LIST---IMMEDIATE DELIVERY

PREPARATORY
1 RAG PICKER, Dodge, 20"x30" dia., Iron Cyl., Garnett type Clothing
3 MIXING PICKERS, Davis & Furber, 48", with Feeds
1 FEARNAUGHT PICKER, Curtis & Marble, 48"
1 BURR PICKER, Sargent, 40"
1 PICKER FEED, Harwood, 60"
1 Automatic FEEDER, Whitin, 60"
1 SHREDDER, Proctor & Schwartz, #170, 48", 1950 Model, V-Belt Drive
1 GARNETT, James Smith, 3 Cyl., 30" x 60"
3 Ceiling CONDENSERS, Davis & Furber, Single Cylinder
3 Ceiling CONDENSERS, Saco-Lowell, Single Cylinder with Fans
2 Upright CONDENSERS, Whitin, Cyl. 72" x 37" dia.

CARDING AND SPINNING
1 TAPE CONDENSER, Davis & Furber, 60", 96 End, Single Rub
1 TAPE CONDENSER, Davis & Furber, 60", 96 End, 120 End, Single Rub
6 Woolen CARDS, Whitin, 68" x 60", 3 Cyl., Peraltas
1 Woolen CARD, Davis & Furber, 68" x 60", 3 Cyl., Peralta
3 SPINNING FRAMES, Woolen, Whitin, Model A, 180 spdls.
1 Platform SCALE, Toledo, portable, dial type, 125# capacity
1 Weightograph SCALE, 2500 lb., Platform 48" x 48"

WINDING
2 Cone WINDERS, Foster #12, 40, 60 Spdl.
1 Bottle Bobbin WINDER, Campbell & Clute, 40 Spindle
1 Filling WINDER, Universal #90, 20 Spindle, 8¼" Bobbin
1 Cone WINDER, Lowell, 16 Spindle, Camless
1 Filling WINDER, Abbott, 60 Spindle, 8¼" Quills

DRESSING
2 Warp REELS, Davis & Furber, 82", Spool Rack, Back and Neck Stands
1 Warp COMPRESSOR, Warp Compression Co., 84", Heavy Duty
1 SLASHER, Johnson, 5 Drum, S. S. Cans 52" x 23"
1 HI-SPEED WARPER, 54", Mtrzd, with Magazine Creel, 800 Live Ends

WEAVING
8 Automatic LOOMS, Crompton & Knowles, 92", W3, 1944-48
72 Automatic LOOMS, Crompton & Knowles, 82" Verirest
28 Automatic LOOMS, Crompton & Knowles, 82", 25 Harness Head
18 Automatic LOOMS, Crompton & Knowles, 92", 25 Harness Head

DYEING
1 DYE JIGG, Pedlow, 80", S. S.
1 Skein DYEING MACHINE, Pegg Pulsating, 1948, 250-500# capacity
1 S. S. Sample DYE BECK, with Oval Reel
1 Package DYEING MACHINE, S. S., Obermaier, 400# capacity

FINISHING
2 Single Acting B.B. NAPPERS, Woonsocket, 20 roll, 90", Mtrzd. (Hooked in tandem)
2 Knitt Goods NAPPERS, Davis & Furber, 80" 20 Roll
2 Double Acting NAPPERS, Gessner, 90", 80", 18 Roll
1 Double Acting NAPPER, Davis & Furber, 88", 24 Roll
3 NAPPERS, McCreary, 66", 1—10 roll, 2—16 roll.
1 Single Acting NAPPER, Davis & Furber, 72", 14 Roll
2 Copper STEAMING UNITS for Nappers.
1 Double Blade SHEAR, Parks & Woolson, with Folder, 60"
1 four blade SHEAR, Parks & Woolson, 60", Auto. Seam Let-Through
6 Double Blade SHEARS, P&W., Model A, 66", plain and list saver rests
1 Double Blade SHEAR, Curtis & Marble, 60", Folder Take-off.
2 Flat Blade SINGLE SHEARS, Curtis & Marble, 66", 60"
1 SHEARING RANGE, C&M., 66½", 2 Double Shears, 2 Steamers, 1 Brush
1 SEMI-DECATUR, Parks & Woolson, Cylinder 72" x 36" Dia.
1 SEMI-DECATUR, Gessner, Cylinder 72" x 3" Dia.
2 POWER PERCHES, Werner, 93½", Motor Driven.
2 POWER PERCHES, Anderson, 72", Motor Driven.
1 POWER PERCH, 96", Motor Driven
1 POWER PERCH, Curtis & Marble, 90", Motor Driven
1 INSPECTING UNIT, Curtis & Marble, 76", with Guiders and Winder
1 BRUSHING MACHINE, Curtis & Marble, 58"
1 BRUSH AND SANDER, Parks & Woolson, 66", 4 Roll
1 DOUBLER, WINDER AND MEASURER, P&W., 66", Springfield Type
2 WINDING AND MEASURING MACHINES, 50", 5 figure Counter
1 ROLLING AND MEASURING MACHINE, Measurograph, 50"
3 WINDERS, Tube, Curtis & Marble, 50", 60"
2 CLOTH FOLDERS, Elliott & Hall, 46", 52"
2 BATCHERS, Simpson, 54", with Yardage Counter and Knives
2 Swing FOLDERS, 90", Ceiling Type
1 INSPECTING MACHINE, 98", Folder Takeoff
1 SCUTCHER, 90", with Vacuum Extractor, Mtrzd.
2 QUETCHES, 2 roll, 1—50", 1—42".
1 QUETCH, 3 roll, 50", 2 brass, 1 rubber
5 SQUEEZE SETS, two 18" Rubber Rolls, Clutch Pulley
1 CLOTH PRESS, Voelker, 66" x 16" dia., V Belt Drive
1 Friction CALENDER, Granger, 43½", 3 roll, Slip Belt Batcher
2 Chinchilla MACHINES, Curtis & Marble, 60"
5 TEASEL GIGS, Wet, approximately 6" Width
2 STARCH AND MIXING KETTLES, Quaker City, with Pumps
1 Mill SEWING MACHINE, Dinsmore, Portable, Electric, 60-D38
3 Railway SEWING MACHINES, Dinsmore, 50"
3 Mill SEWING MACHINES, Rotary, Foot Power
1 TENTER FRAME, Butterworth, Clip Type, 50" x 80 ft.
1 TACKING MACHINE, Birch, Motor Drive

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Tel.: MElrose 5-6741

Complete warping and slashing rayon unit, consisting of 5 can Cocker slasher, beam creel, Taylor controls, Sipp Eastwood high speed creel, high speed entwistle warper head, section beams, steam jacketed size kettles.

One Johnson 5 can slasher, rebuilt
One Johnson 20 beam creel
One million Duplex rayon heddles, 13"
One half million Artex heddles, 13"
1200 harness frames, 45" wide, 12" heddle
12 48" "K" model looms, 52½" reed space, fine cut gear, changed for rayon
40 Garfield threaded beams, will open up from 42" to 27"
One Extractor, 30" basket, underslung motor
Two Sipp skein winders

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45 Utter Avenue, Hawthorne, N. J.
Phones: Hawthorne 7-6363
Ridgewood 6-1832

IMMEDIATE DELIVERY
1—76" x 50' W. & J. Tenter Frame, S. S. Clips, M.D.
1—64" x 40' W. & J. Tenter Frame, S. S. Clips, M.D.
1—60" x 30' W. & J. Tenter Frame, S. S. Clips, M.D.
3—Merrow Sewing Machines, M.D.
1—Narrow Fabrics Dry Box, M.D.
8—Textile Squeeze sets, 2 rubber rolls each 96" long x 19" and 12" dia., Anti-friction bearings
1—72" Park Woolson Semi-Decater, M.D.
1—3-roll V. V. Calender, M.D.
1—Set 15 Dry Cans 72"—6—S. S.—9-Copper, M.D.
1—Set 8 Copper Dry Cans 84", M.D.
1—4' & 1—6' Dye Beck, S. S. Box & Reel, M.D.
1—48" Extractor S. S. Basket, side motor
2—60" all S. S. Dye Jiggs, enclosed gears, Ind. M.D.
2—63" Jiggs, S. S. Lined, M.D.
1—76" Beamer, with enclosed B. B. Reeves, M.D. Reverse Switch
1—Set Mt. Hope Guiders on 60" stand
1—50" Padder, 2-roll $400.00

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HOSIERY MACHINES
used and rebuilt
KNITTERS—RIBBERS—LOOPERS—
CYLINDERS—DIALS—TRANSFERS
HOSIERY NEEDLES AND PARTS
JOS. BRESANI
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FOR SALE

1—20M Spindle Comb Yarn Mill
1—10M Spindle Carded Yarn Mill
1—New Building 40,000 sq. ft.
1—Building 100,000 sq. ft.

FOR SALE

32—Deliveries Control Draft Saco Lowell Drawing 4 delivery frames, 1935-41 model, 2 Lap Machines
20—8x4 Saco Lowell Slubbers, 144 and 152 spindles, J-3 Long Draft.

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1947-1949 EQUIPMENT-MILL LIQUIDATION

Draper "XD", 46"; Atwood Utility Uptwisters; Atwood Redraws; H & W Conditioner; Proctor & Schwartz Drier; Johnson 3-Arm Soaking; Warpers and Creels; Knotter.

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A SERVICE OF SAVINGS

2—Haskell-Dawes 12 sp. Tubing Twisters.
1—Schmutz Burlap Bag Printing Machine.
1—Pr. Hunter Squeeze rolls 78", pneumatic.
1—Meadows 70" Reverse Roll Coating Machine.
1—Sargent Apron Dryer & Wool Back Washer.
1—65" Padder, pneumatic pressure, 1951.
1—Schreiner 55½" Hydraulic Embosser, M.D.
1—Gessner Vacuum Extractor, 72", motor Dr.
1—P&S Blamire Lapper, floor apron, rolls.
1—Hunter 26-B Fulling Mill, S.S. 1948 model.

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92 DRAPER AUTOMATICS
44" 46" 49" cloth

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FOR SALE

1—Textile 54" Friction Calender
1—Butterworth 46" Rolling Calender
1—Morrison 50" Silk Calender
1—Butterworth 108" Rolling Calender
1—Textile 20'x90" Tenter
1—Morrison 42'x60" Tenter
1—Textile 60'x50" Tenter
53—Copper Dry Cans 72" Face

James E. Fitzgerald 10 PURCHASE ST., FALL RIVER, MASS.
Telephone 8-5616
SPECIALIZING IN BLEACHING, DYEING AND FINISHING MACHINERY SINCE 1920

(Continued from page 328)

The new standards were issued August 12 and are scheduled to become effective with the start of the new crop year.

"Every action by any group of breeders, producers, ginners, merchants, the government, or anyone else that adversely affects the manufacturer of cotton textiles is bound to do one thing: play into the hands of cotton's competition," the ACMI warned.

Coated-Fabric Shipments. Plastic-coated materials and all-plastic sheeting shipments for the first six months of 1952 exceeded shipments in the comparable period of 1951 by 1,201,354 linear yd. and 2,080,880 sq. yd. respectively, according to figures released by the Plastic Coatings & Film Assn., New York, N. Y. Shipments of plastic-coated materials by association members and cooperating companies for the first half of 1952 were 22,009,793 linear yd., compared to 20,808,439 yd. for the first half of 1951.

Australia Raises Wool Sights. In the two years since its introduction, myxomatosis, a virus deadly to rabbits, has killed enough of the destructive pests in Australia to permit Australia's grazing lands to carry a minimum of 4 million more sheep than heretofore. Continued rabbit destruction at this rate may permit an increase in sheep numbers by some 15 to 20 million in the foreseeable future.

Harmless to other animals, but fatal to the rabbit, myxomatosis is a virus disease spread by certain species of mosquitoes, which carry it to rabbits both in the open and in rabbit burrows. Since its introduction in the war against the rabbit, the virus is estimated to have killed from 100 to 300 million rabbits. Estimates of the total rabbit population of Australia vary from 500 million to 2 billion.

Studies indicate that seven rabbits will consume as much grass in one day as the average sheep, and it is believed that eradication of a major part of them may in the long run permit herds to be increased by 40 million sheep.

Parachute Cloth-Test Program. Exhaustive tests are being conducted on the advantages and disadvantages of various types of parachute cloth in a program under way at Georgia Institute of Technology, Atlanta, Ga. The Institute is working closely with the Air Force on what kind of parachute performance can be expected under

(Continued on page 332)

PRIVATE LIQUIDATION SALE

Machinery, Equipment, Supplies, etc.

of the DUNDEE FINISHING COMPANY 35-8th St., Passaic, N. J.

All Equipment available for immediate removal

Partial Listing

14—50"-72" all S.S. Dye Jiggs, enclosed gears, ind. motor driven.
4—4'-12' all S.S. Dye Becks, ind. motors and reducers.
1—Perkins 80 ton hydraulic calender, 50", 3 rolls, motor.
1—V.V. Palmer-Quetch unit, motor & reeves.
2—Sets 66" x 23" dry cans, ball bearing, copper, ind. Johnson joints and traps, vertical.
1—40' x 66" tenter frame, S.S. clips, motor.
1—Werner 50" padder, 2 rubber rolls, ball bearing, motor, spare rolls.
1—54" silk calender, ball bearing, motor.
1—National loop dryer, 84" revolving sticks.
3—50"-72" beamers with Merrow 60D3B sewing heads on track, motors.
2—Copper jacketed mixing kettles, 150 gal. and 200 gal. capacity, motor driven agitators.
1—Nash vacuum unit, #3.
1—48" extractor, copper basket, side motor, safety cover.
1—Progressive 64" inspecting machine, new.

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COMPRESSORS			VAC. PUMPS		
CFM	Press	Make	CFM	Size	Make
89	45	Pa	60	5-5 x 3½	IR
168	40	CP	82	6-6 x 4	IR
252	35	AM	187	10 x 6	CP
284	15	IR	193	Rotary	Fuller
311	40	IR	265	12 x 6	CP
740	40	IR	360	18 x 7	IR
800	55	IR	800	18 x 9	WO
931	55	AM	1134	22 x 9	Pa
1084	35	Pa	1633	24 x 11	CP
1084	35	IR	1987	26 x 13	WO
1292	40	AM			
1452	70	Pa			
1987	12	WO			

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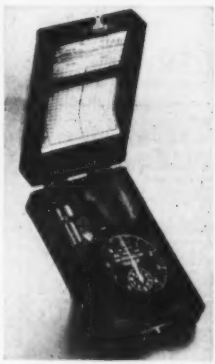

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Jaeger Model 4030A 43-A1 43-A3

★ Ideally suited for testing the speeds of motors, particularly of fractional horse power, generators, turbines, centrifugals, fans, etc.
★ Very small Torque — requires practically no power to drive.
★ Unequalled Readability 2" Open face dial—each division on large dial equals 1 RPM; each division on small dial equals 100 RPM. 0 to 1000 RPM.
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Will give accurately within a few seconds, by direct reading the R.P.M. of shafts. Each unit comes complete in a velvet lined carrying case 5"x3½"x 1½". Net List Price $70.00—Surplus—Guaranteed.

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2M Wor. Spang. caps 8" x 1⅞"
800 End Mag. Creel, Cocker.

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2M Roving Cans, 12x36
500 Roving Cans, 10x36
150M 8⅝" A. L. Bobbins, Wool, (Selected)
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Bradford Drawing Equip. Excellent Condition, Priced Right

1—8 Spindle Wor. Draw Box 14x7
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81 Double Section, Gill Box Cans (Fibre) (14½ x 16 x 36")

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Tube + 3" 30° Cone Attachments, Anti-Wear Tensions, Motorized

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20 ATWOOD 110 UPTWISTERS 5" & 6" GAUGE 1 LB. CAPACITY SPOOLING AVAILABLE

5 SIPP WINDERS O.D. OIL-LESS BEARINGS, FINGERS WILL ACCOMMODATE 5" DIA. HDS. 140 SPINDLES

10M SPINNER SPOOLS FOR NYLON 5" T. x 3¼" x ⅛" Thick Fibre, Aluminum Barrel, s.s. Ferrule.

100 M. FIBRE HEAD SPOOLS 4-9/16"T x 3"H x 1½" Bbl.

250 M. FIBRE HEAD SPOOLS 3⅝"T x 3"H x 1⅜" Bbl.

25,000 Fibre Head Spools—5¼"T x 4¾"H x 2¼" Bbl.

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300 Auto Drapers 43" to 76" cloth
16 C & K Auto Bob Changers 2 x 1 - 72" R.S.
140 S-3 C & K 52" R.S. shuttle changers
12 C & K 4 x 4 - 54" R.S.
40 C & K Woolen looms 72" to 110" R.S.
404 Draper Model L 100" R.S. Sheeting Looms.
24 Draper Model L 83½" R.S. Sheeting Looms.

Sipp Hyspeed Warper

DYEING MACHINERY

1 Cottage Steamer 24' x 10'
1 2 Roll 60" Quetch
1 S.S. open width washer with squeeze rolls
1 Ager 60" 48 rolls 20' long
1 48" self balancing Extractor
1 Set of 9-68" Copper Cans
1 Set of 5-66" Copper Cans 30" diam.
1 New 80½" Beamer
14 S. S. Cans 48"
1 80" wide Pin Tenter Frame
1 40" Hinnikens 60" frame with gas Burners, reeves & motor
1 60" Hinnikens Jiggs all stainless steel
1 Paterson Examiner, 72" wide
1 72" Park Woolson Decater
1 Set 18 Dry Cans 48" face; 5 stainless steel, 13 iron tinned with reeves
8 Dye Boxes S.S. lined 8'—10'—12'
1 Jostrom fabric conditioner 64"
1 19 can Butterworth dryer 72"
4 Werner-Jiggs 72" S.S.
2 Morrison-Jiggs 60" S.S.
4 Three (3) Roll Padders 45"
30 50" Dry Cans
5 Atwood 5B Twisters
9 Atwood Single Deck Utility Spinners
8 Sipp Warpers & Winders
20 #90 Universals
4 Oswald-Grundy 46—Spindle Cop Winders
5 Foster-Coners 75A
3 Johnson Slashers 7 Can & 3 Can—66" & 5 Can
1 Set 17 Can Butterworth 132" S.S. B.B. Motor & Reeves Drive
1 72" Greige Washer with Squeeze Rolls 24' long
1000 Electro Rods 66" to 133"

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Coners, tubers, pineapple coners built to your specifications.
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1—40 Spindle Foster #12, skein in tube
1—40 Spindle Atwood 5B-Vertical motor
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EXCELLENT FINISHING MACHINERY FOR SALE AT LOW PRICES
1—90"x60" wide Textile Tenter & Chain.
1—6-Roll Calender 44" face complete with 20HP motor and controls.
10—Johnson & Bassett Pantographs, complete with diamonds.
1—44" 2-Roll Padder with stainless steel pan.
1—Complete Franklin package Dyeing Plant. Monel Metal Tanks.
1—62" Palmer machine complete with motor, gear box, blanket, etc.
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4—SS Open Width Dye Machines 64" Wide Motors.
1—80" Hydraulic Padder.
1—72" 2-Drum Batchers steel drums with scrimp tensions and measuring drum etc. Selvage spool winders & Bobbin Strippers for Lace Trade.
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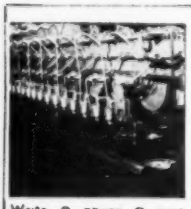

FOR SALE
30—Tinned steel dry cans 23" dia x 120" face bucket type gear driven friction bearings upright or horizontal frames.
20—Copper dry cans 23" dia x 44" face bucket type gear driven friction bearings upright or horizontal frames.
15—Copper dry cans 23" dia x 100" face steel heads gear driven.
5—7' slashers 58" face bucket type.
5—5' slashers 58" face bucket type.
2—5' slashers 38" face bucket type.
We can supply one dry can or as many as your needs may be. We fabricate new copper or stainless steel dry cans any width. Dry can machines built to your specifications.

Write • phone • wire
296 Lincoln Ave.
EASTERN TEXTILE CO.
New and Used Finishing Machinery
Specializing in Dry Can Machinery
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Fall River, Mass.

(Continued from page 330)

various conditions from various fibers, twists, plies, weaves, and finishes. The school's extensive aeronautical, mechanical, and textile know-how made it a natural choice for doing the long-term research job. Dr. M. J. Goglia heads up the theoretical studies and mathematical analyses, Prof. G. Fletcher makes up the fabrics according to specifications, and Prof. H. W. S. LaVier has developed the testing apparatus used.

1952 N. C. State Textile Conclave. The third annual conclave for alumni of the School of Textiles, N. C. State College, is planned for October 24 and 25 at the school in Raleigh, N. C. The technical program will include several speakers who will present papers to bring graduates up to date on technical and research developments in the industry. The social program will consist of a dinner on Friday evening, the 24th, at the Tar Heel Club, and a football game on Saturday the 25th between N. C. State and Florida State College. The date for the conclave coincides with the annual N. C. State Homecoming.

Canadian Textile Seminar. Top textile experts in Canada, United States, and Europe gathered in Kingston, Ont., Canada, last month for the third biennial Canadian Textile Seminar. More than 500 technicians attended the three-day gathering. The third seminar had a more Canadian flavor than the previous gatherings. While experts from the United States and Europe attended in numbers as before, Canadians this time authored more of the 30 papers than in previous meetings. A digest of the more significant papers presented at Kingston will appear in a forthcoming issue of TEXTILE WORLD.

New York-Area Textile Courses. Seven courses of interest to textile concerns and their employees in the metropolitan New York area are being given this school year at Fairleigh Dickinson College, Rutherford, N. J. Classes began Wednesday, Sept. 17. Courses are offered in orientation in textiles, raw materials, textile chemistry, textile dyeing, printing, finishing, and identification-analysis-testing. A new four-year course leading to the B.S. degree in chemistry with a textile option is being offered by the school for the first time. The new Hesslein Textile Building, equipped with model machinery for dyeing and finishing as well as for woolen and worsted weaving, is also being used for the first time this fall.

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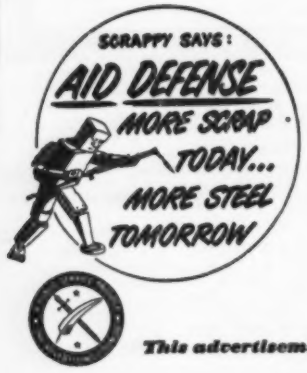

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A. Air Conditioning, Air Cleaning
B. Building Construction and Maintenance, Paints, Yard Equipment, Water Supply
C. Chemicals and Dyestuffs
D. Cleaning Equipment
E. Dyeing, Finishing, and Cloth-Room Equipment and Supplies
F. Electrical Equipment—Motors, Controls, Lighting, Etc.
G. Fibers, Yarns, Mills, Finishing Companies
H. Fluid Handling.—Compressors, Pumps, Piping, Valves, Fittings
K. Instruments: Measuring, Metering, and Weighing Apparatus
L. Knitting-Mill Equipment and Supplies
M. Lubricants and Lubrication Equipment
N. Management Services—Factors, Consulting Engineers, Insurance, Personnel Facilities, Plant Sites, Etc.
O. Materials and components for Machinery and Equipment
P. Materials Handling, Packaging, and Shipping Facilities
Q. Power Generation and Transmission (see also Electrical Equipment)
R. Weaving and Warp Preparation Equipment and Supplies
T. Yarn-Production Winding, and Twisting Equipment and Supplies

An * indicates additional data in the 1951-52 Pre-Filed Textile Catalog. This index is published as a convenience to the reader. Great care is taken to make it accurate, but Textile World assumes no responsibility for errors or omissions.

*Abbott Machine Co.	215	T
Acme Knitting Mach. & Needle Co.	319	L
Acme Steel Co.	249	P
Akron Spool & Mfg. Co.	308	R
Aldon Spinning Mills	317	G
Alemite Div., Stewart-Warner Corp.	154	M
Allen-Bradley Co.	3rd Cover	F
Allen Mfg. Co.	282	O
*Allis-Chalmers Mfg. Co.	19, 26-27	F Q
Alvey Conveyor Mfg. Co.	189	P
American Blower Corp.	72	A
American Crayon Co.	317	E L R
American & Efird Mills, Inc.	313	G
*American Lava Corp.	177	L RT
American Lumber & Treating Co.	220	B
American Metal Spinning & Stamping Co.	316	E
American Steel & Wire Co.	42	O
American Viscose Corp. (Yarns)	279	G
American Viscose Corp. (Textile Chem. Div.)	45	C
Analytical Measurements, Inc.	286	K
*Armstrong Cork Co. (Cots)	40-41	T
*Armstrong Cork Co. (Roll Covering)	237	R
Arnold, Hoffman & Co., Inc.	140	C T
*Ashworth Bros., Inc.	75	T
*Atkinson, Haserick & Co.	20 to 25	T
Atlantic Rayon Corp.	261	G
Atlantic Steel Co.	228	O
*Atlas Electric Devices Co.	294	K
Atlas Powder Co.	45	C
*Bachmann Uxbridge Wstd. Corp.	179	R
Baldwin-Duckworth Div. of Chain Belt Co.	68	Q
*Barber Colman Co., Controls Div.	336	K
Textile Div.	305	R
Barco Mfg. Co.	295	H
Barnes Textile Associates, Inc.	306	N
Basson Mfg. Co., Inc.	314	D P RT
Bemis Bro. Bag Co.	208	P
Bendix Aviation Corp., Eclipse Machine Div.	288	T
*Bersworth Chemical Co.	298	C
Bijur Lubricating Co.	244	M
*Blickman, Inc., S.	301	E
Boger & Crawford	211	G
*Booth Co., Benjamin	142	T
*Boston Woven Hose & Rubber Co.	84	O
Brammer Corp.	254	Q
*Brinton Co., H.	148	L

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Bristol Co., The	53	K
Brush Development Co.	39	K
Bryant Chemical Corp.	150	C
Buffalo Pumps, Inc.	218	H
Burlington Engineering Co., Inc.	13	E
*Butterworth & Sons Co., H. W.	130	E
Cabot Inc., Samuel	312	R
Calco Chemical Div., American Cyanamid Co.	277	C
*Caldwell Co., W. E.	319	B E
Carrier Corporation	223	A
Celanese Corp. of America, Chemical Div.	267	C
Yarn Div.	175	G
Century Electric Co.	88	F
Chemsteel Construction Co., Inc.	320	B
*Chicago Pneumatic Tool Co.	50	H
Cities Service Oil Co.	169	M
Clark Equipment Co., Industrial Truck Div.	225	P
Clark Mfg. Co.	204	H Q
Cleaver-Brooks Co.	161	Q
Cleveland Tramrail Div., The Cleveland Crane & Eng'g. Co.	280	P
Clipper Belt Lacer Co.	321	Q
*Cocker Machine & Fdry. Co.	16	R
*Cole Mfg. Co., R. D.	256	B E
*Colson Corp.	248	P
Columbia-Geneva Steel Co.	42	O
*Cook-P & N Machine Co., Inc.	152	E
*Crane Co.	60	H
Crane Mfg. Co.	266	L
*Crompton & Knowles Loom Wks.	14	R
Cross Cotton Mills Co.	217	G
Crucible Steel Co.	28	O
Curlator Corp.	245	T
*Curtis & Marble Machine Co.	252	T
Dana Warp Mills	317	G
Daniels, Inc., C. R.	276	P
*Darnell Corp., Ltd.	222	P
*Dary Ring Traveler Co.	274	T
*Davis & Furber Machine Co.	36	T
Dayton Rubber Co., The	46	RT
Dexter Chemical Co.	270	C
Dietert Co., H. W.	261	K
Dixie Leather Corp.	61	R
Dodenhoff Co., Inc., W. D.	34	E
Dodge Co., C. B.	262	B
Dodge Mfg. Co.	48	Q
*Dommerich & Co., L. F.	56	N
Dow Corning Corp.	265,292	C
*Draper Corporation	1	R
Dusenberg-Bosson of Amer., Inc.	311	T
*duPont de Nemours & Co., E. I., Dyestuffs Div.	259	C
Electrochemical Dept.	299	C N
*Durant Mfg. Co.	250	K
*Economy Baler Co.	321	P
Edroy Products Co.	304	N
Egelhaaf, C. C.	312	T
Elliott Co., Crocker-Wheeler Div.	81	F
*Emery Industries, Inc.	185	C
Emerson Apparatus Co.	262	K
Emmons Loom Harness Co.	71	R
Erick Gross Embroidery Automat, Inc.	234	E
Ericsson Telephone Sales Corp.	236	K
Fafnir Bearing Co.	83	O Q
Fairbanks-Morse & Co.	273	H
Falls Yarn Mills	264	G
Fielden Inst., Div., Robertshaw-Fulton Controls Co.	246	K
*Foster Machine Co.	51	T
Foxboro Co.	266,272	K
Fuller Brush Co.	200	B
Gardner-Denver Co.	47	H
Gaylord Container Corp.	165	P
General Chemical Div., Allied Chem. & Dye Corp.	287	C
General Dyestuff Corp.	35	C
*General Electric Co.	86-87, 144	C F Q
General Latex & Chem. Corp.	309	C
Gits Bros. Mfg. Co.	335	M
Globe Dye Works	226	G
Goodyear Tire & Rubber Co.	15	Q
Graton & Knight Co.	61	R
*Grinnell Co., Inc.	43	H
Guardian Chemical Corp.	203	C
Gulf Oil Corp.—Gulf Refining Co.	38	M
Hardwood Mfg. Co., The	307	R
Hartford Machine Screw Co.	231	T
*Harwood & Son, Geo. S.	268	T
*Haskell-Dawes Mach. Co., Inc.	262	T
*Heim Co.	210	R
Heineman Corp., O. Div. of Aetna Industrial Corp.	221	G
*Herr Mfg. Co.	281	T
*Heyden Chemical Corp.	209	C
*Hild Floor Machine Co.	318	D
Hilton-Davis Chemical Co., Div.	241	C
Holdsworth Gill Screw Co.	24-25	T
Houghton & Co., E. F.	181	C
*Howard Bros. Mfg. Co.	12	T

Hubinger Co., The	254	C
*Hunter Machine Co., Jas.	49	E
*Huyck & Sons, F. C.	304	E
Hyatt Bearing Div., General Motors Corp.	257	O Q
*Ideal Industries, Inc.	242	T
Industrie-Werke-Karlsruhe	303	E
*Industrial Heat Eng'g. Co.	268	E
Ingolstadt	321	T
Interchemical Corp., Textile Colors Div.	193	C
Iselin & Co., Inc., Wm.	263	N
*Ives Co., L. T.	319	I
*Jenkins Sons Inc., M. W.	190	E
*Jiffy Textile Marker Co.	318	E I R
*Johnson Corp.	285	H
Johnson Service Co.	167	K
Keever Starch Co.	201	C
*Kenyon & Son, D. R.	313	E
Kidde & Co., Inc., Walter	271	T
*Kidde Mfg. Co., Inc.	275, 297	I
Kold-Hold Mfg. Co.	198	E O
Lador, SA	314	I
*Lambeth Rope Corp.	317	R T
*Laurel Soap Mfg. Co., Inc.	256	C
Lazenby & Co., F. A.	270	T
Lestershire Spool & Mfg. Co.	219	T
Libby-Owens-Ford Glass Co., Fiber Glass Div.	250	G
Lincoln Engineering Co.	199	M
Linde Air Products Co., a Div. of Union Carbide & Carbon Corp.	248	L RT
*Link-Belt Co.	7, 67	Q
*Loper Co., Ralph E.	316	N
Masury-Young Co.	227	B
*M-B Mfg. Co., Inc.	207	I RT
McCreary Machine Co.	57	E
*Meadows Mfg. Co.	80	Q
Mellor, Bromley & Co., Ltd.	216	I
*Merrow Machine Co.	319	E
Minneapolis-Honeywell Reg. Co., Industrial Div.	78-79	K
Mobilift Corp.	194	P
*Mansanto Chemical Co., Textile Chemical Dept.	89	C
Morris Fur Co.	320	R
Morton Machine Co.	308	T
*Mt. Hope Machy. Co.	161	E
National Aniline Div., Allied Chem. & Dye Corp.	29	C
*National Drying Machy. Co.	338	E
National Carloading Corp.	303	P
National Tube Co.	42	O
New Departure Div. of General Motors	9	O Q
Nitrogen Div., Allied Chem. & Dye Corp.	255	C
Nopco Chemical Co.	235	C
Norris Bros.	258	R
Oakite Products, Inc.	313	C
Pabst Sales Co.	296	C
Page Madden Co. Inc.	186	I RT
Parks-Cramer Co.	202	A D
Penick & Ford Co., Ltd.	251	C
*Perfecting Service Co.	214	H
Permutit Co.	315	B
Pfister Chemical Co.	191	C
Philadelphia Quartz Co.	268	C
Pick Mfg. Co.	302	E
Pittsburgh Coke & Chem. Co.	62-63	C
Platt Bros. (Sales) Ltd.	20-21	T
Polymer-Southern Chem. Co.	337	C
Powell Co., Wm.	146	H
Precision Chrome & Finishing Co.	250	O
Presision Gear & Machine Co.	306	Q
*Prince, Smith & Stells	22-23	T
*Proctor & Schwartz, Inc.	192, 193	E T
Radio Shack, Corp.	200	F
Reeves Pully Co.	70	Q
Regnery Corp., F. L.	238	T
*Reiner Inc., Robert	253	R
Reliance Elec. & Eng'g. Co.	54-55	F
Rhoads & Sons, J. E.	1	R
Richmond Oil, Soap & Chem. Co.	266	C
*Ridge Tool Co.	196	H
*Robert & Co., Associates	2nd Cover	N
*Rohm & Haas Co.	213	C
Rome Soap Mfg. Co.	313	C
Ryerson & Son Inc., J. T.	132	O
Sandoz Chemical Wks.	17, 18	C
*Sargent's Sons Corp., C. G.	229	T
Schenley Distributors, Inc.	82	N
Scherr Co., Inc., Geo.	318	K
Schlafhorst & Co., W.	11	RT
Schweiter Ltd.	224	T
Scott & Williams, Inc.	284	R
*Scott Testers, Inc.	309	K
Sill Industries	283	E

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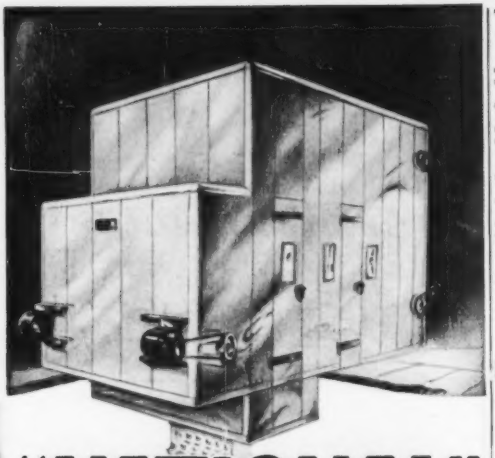

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Sisalkraft Co., The	258	P
Socony-Vacuum Oil Co., Inc.	33	C
Solvay Process Div., Allied Chem. & Dye Corp.	136	C
*Sonoco Products Co.	157	E T
*Southern Shuttles Div. Steel Heddle Mfg. Co.	290, 291	R
*Standard Chemical Prod., Inc.	293	C
Standard-Coosa-Thatcher Co.	69	G
*Standard Fabricators, Inc.	233	E
*Standard Pressed Steel Co.	316	O
Star Woolen Co.	8	G N
Steelcote Mfg. Co.	301	B
*Steel Heddle Mfg. Co.	290, 291	R T
Stellite American Corp.	300	
*Stephens-Adamson Mfg. Co.	195	O Q
Sterling Electric Motors	10	F T
*Sterling Ring Traveler Co.	252	
*Stop-Motion Devices Corp.	307	L
Sun Oil Co.	128	C
Superior Combustion Industries, Inc.	321	Q
*Supreme Knitting Mach. Co., Inc.	269	L
Swift & Co., Soap Dept.	239	C T
*Synthane Corp.	134	
Taylor Instrument Cos.	44	K
Tennant Co., G. H.	212	B O
Tennessee Coal & Iron R. R.	42	
Tennessee Corp.	310	C
Tension-Rite Industries	311	R
*Terrell Machine Co., Inc.	22	R
Textile Banking Co.	138	N
Textile Equipment Corp.	34	F
*Textile Machine Wks.	90, 159	L
Tide Water Associated Oil Co.	66	M
*Tompkins Bros. Co.	230	L
Torrington Co., The (Needles)	73	L
Torrington Co., The (Bearings)	74	O Q
Tower Iron Works	232	E
Union Carbide & Carbon Corp., Linde Air Products Co.	240	I RT
Unionmatex, Textilmaschinen-Union G. M. B. H.	37	F RT
*U S Bobbin & Shuttle Co.	197	T
*U. S. Ring Traveler Co.	264	T
U. S. Rubber Co., Mechanical Goods Div.	289	T
U. S. Steel Co.	42	O
U. S. Steel Export Co.	42	O
U. S. Steel Supply Co.	42	O
U. S. Stoneware Co.	310	B N
U. S. Testing Co.	264	
*Universal Winding Co.	6, 170	T
*Veeder-Root, Inc.	4th Cover	K
Warner & Swasey Co.	52	T
Warwick Chemical Co.	2	C
Watson-Williams Mfg. Co.	248	R
Westinghouse Electric Corp., Lamp Div.	76-77	F
Micarta Div.	58-59	O
Motors & Controls	30-31	F
Textile Industry	64-65	Q
*Whitin Machine Works	85, 224	T
*Whitinsville Spinning Ring Co.	317	T
Wildman Mfg. Co.	278	L
Wolf & Co., Jacques	247	C
Wood's Sons Co., T. B.	315	Q
Worthington Corp.	320	Q

PROFESSIONAL SERVICES

Barnes Textile Associates 306
Eaton & Bell 324
Gurley Jr., Martin H. 324
Kuljian Corp. 324
Lowe & Co., R. E. 316
Robert & Co. Assoc. 2nd Cover

SEARCHLIGHT SECTION
(Classified Advertising)
H. E. Hilty, Mgr.

EMPLOYMENT
Positions Vacant 323
Selling Opportunities Offered 323
Positions Wanted 324
Selling Opportunities Wanted 323, 324
Employment Services 323, 324

BUSINESS OPPORTUNITIES
Offered 324

NOTICES
Auction 325

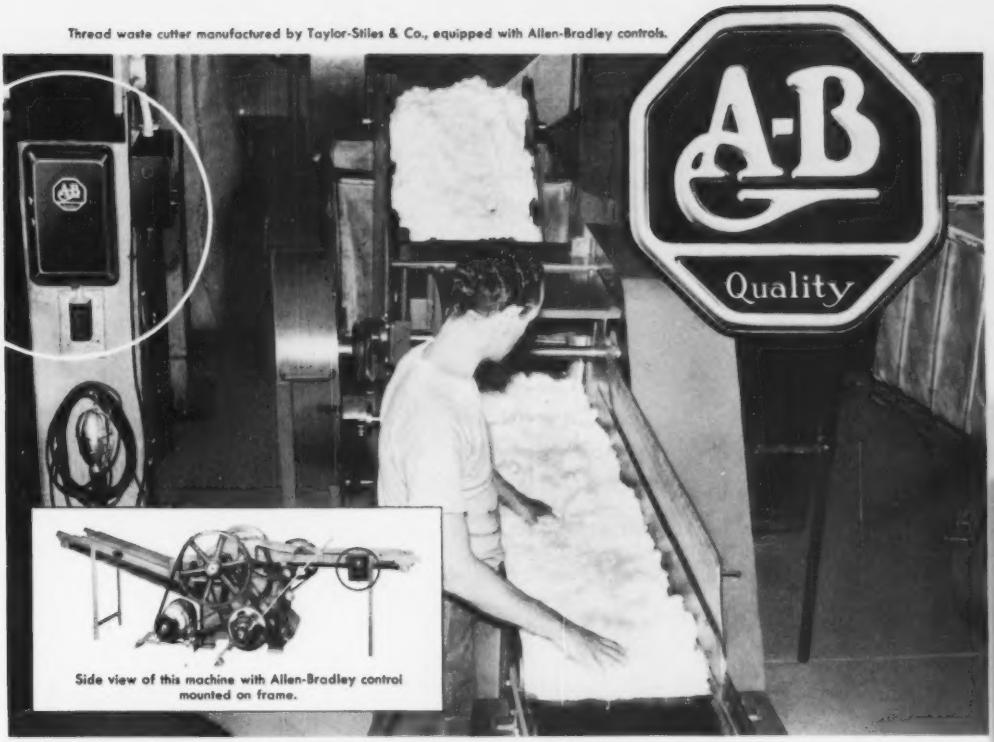
EQUIPMENT
For Sale 324-301

WANTED
Equipment 324
Miscellaneous 324

ADVERTISERS INDEX

Advanced Textile Co. 333
American Air Compressor Corp. 331
Bialek & Co., Theodore 330
Blank Co., Inc., A & M 329
Blank, Moe 329
Bresani, Joseph 329
Celanese Corp of America 327
Chemical Service Corp. 324
Collins & Aikman Corp. 327
Consolidated Products Co., Inc. 330
Cornell Sales 331
Courtaulds (Alabama) Inc. 323
Dixie-Home Stores 324
Drake Personnel Inc. 324
Eastern Metals Corp. 333
Eastern Textile Corp. 332
Electric Equipment Co. 329
Fitzgerald James F. 330
Freeman & Co., Samuel T. 325
Fyans & Israel Machinery Co. 326
Gaines Textile Machinery Co., Inc. 332
Hawthorne Textile Machinery Co. 329
Industrial Products of America 331
Lewith Machinery Corp., Wilson 329
Lorraine Trading Corp. 324
McCaffrey & Son Inc., L. J. 331
McCloskey Inc., John J. 328
McDowell Associates Inc. 329
McKittrick Co., Frank G. W. 326
Miller Machinery Co. 330
Minnesota Mining & Manufacturing Co. 323
New England Products Co. 324
Pennsylvania Spool & Equipment Co. 331
Rabinowitz & Sons, Wm. 327
Raymond Service Inc Chas. P. 323, 324
Republic Textile Equipment Co. 328
Rock River Woolen Mills 331
Shaffer & Max Inc. 326
Solomon, Michael 324
Springs Cotton Mills, The 333
Stave & Kessler 332
Textile Auxiliaries 333
Textile Finishers Equipment 332
Velvet Textile Corp. 326
Warren Fabrics Co Inc. 333
Welling Co., Chas. 324
Wheeler Company, Frank W. 327

Thread waste cutter manufactured by Taylor-Stiles & Co., equipped with Allen-Bradley controls.



Side view of this machine with Allen-Bradley control mounted on frame.

THREAD WASTE CUTTER

equipped with ALLEN-BRADLEY TROUBLE FREE MOTOR CONTROLS

Where continuous, uninterrupted production is essential, it pays to equip your textile mill with reliable, trouble free Allen-Bradley motor controls. Their simple design and rugged construction is your guarantee of millions of trouble free operations.

Allen-Bradley has a complete line of motor controls to meet the requirements of your textile mill applications —across-the-line starters, where quick starting is satisfactory . . . and reduced voltage starters for smooth, gradual acceleration. Consult with Allen-Bradley, today.

Allen-Bradley Co., 120 W. Greenfield Ave.
Milwaukee 4, Wis.

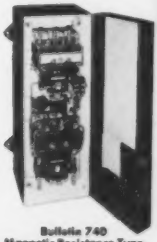
Typical Allen-Bradley Motor Controls for the Textile Industry

Bulletin 709 Automatic Solenoid Starter

Bulletin 609 Manual Motor Starter

Bulletin 705 Magnetic Rev. Switch

Bulletin 713 Combination Starter



Bulletin 740 Magnetic Resistance Type Starter

Bulletin 800 Standard Duty Push Button

Bulletin 801 Limit Switch

ALLEN-BRADLEY
QUALITY
MOTOR CONTROLS FOR TEXTILE MILLS

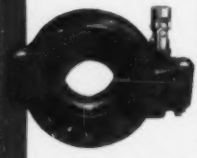
V-R is 1st Again

in Advancement of 2-3 Pick and Hank

COUNTER DESIGN

For 30 years, Veeder-Root has scored the important "firsts" in advancement of counter design . . . studying the needs of mill men and giving *them* what they need. Now here again is a V-R "first" which offers additional new features:

- EASIER TO READ, reset and maintain.
- SHEAR-PIN TYPE OF PROTECTION built into reset knob.
- 4th UNIT CAN BE ADDED for use as 4th-shift counter or as totalizer.
- BRASS BEARINGS on horizontal shafts.
- BRONZE OILITE BEARINGS on vertical drive shafts.



NEW PLASTIC CONNECTION (at left) . . . cuts installation time, maintenance costs . . . resists humidity, wear, vibration.

Yes, here again is V-R Value, and in fuller measure than ever before. See your nearest Veeder-Root office . . . *and see us at the Show!*

VEEDER-ROOT INC.
HARTFORD 2, CONN.

Welcome to
BOOTH 107
at the Show . . . and visit our New Building

—an easy 6-mile drive from Textile Hall, straight out Route 29 on Greenville-Spartanburg Highway.